BAY AREA TRANSPORTATION BLUEPRINT
FOR THE 21ST CENTURY

PROJECT NOTEBOOK OF CANDIDATE PROJECTS

OCTOBER 1999

METROPOLITAN
TRANSPORTATION
COMMISSION

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METROPOLITAN
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Overview of the Blueprint Project Notebook of Candidate Projects

Purpose

The purpose of the Blueprint Project Notebook is to provide a comprehensive and consistent set of information for all projects proposed to be included in the Bay Area Transportation Blueprint for the 21st Century.

Organization

The Blueprint Project Notebook is organized into sections representing Bay Area travel corridors—San Francisco Bay region as a whole, 14 specific travel corridors, and the external gateways to other regions outside the nine-county Bay Area. As in the 1998 *Regional Transportation Plan* (RTP), individual project proposals will be considered in a corridor context. Each section consists of a corridor map which identifies projects that can be mapped. A "fact sheet" for each candidate Blueprint project provides a project description, background, proposed operating scenario, estimated costs, and observations/issues specific to project implementation and impacts. This notebook also includes appendices: Appendix A provides a list of public comments received during the Blueprint process to date and responses to those comments, and Appendix B lists the candidate projects by corridor.

Candidate Projects

MTC compiled a preliminary list of candidate projects from several sources prepared by MTC: 1998 *Regional Transportation Plan*, Regional Rail Reconnaissance (1998), *San Francisco Bay Area Regional Ferry Plan Update* (1999), and *High-Occupancy Vehicle (HOV) Lane Master Plan Update* (1997). Additional sources include the Bay Area Council and Bay Area Economic Forum's *Bay Area Water Transit Initiative—Bay Area High-Speed Water Transit System for the 21st Century* (1999), new or proposed sales tax measures, and corridor studies.

MTC also developed a list of regional and "other" projects—such as the system operation and maintenance, system management, seismic preparedness, life line transit, customer services, bicycle and pedestrian facilities, railroad right-of-way preservation, and Transportation for Livable Communities—based on the 1998 RTP shortfalls and Track 2 as well as an assessment of existing and projected regional needs for such programs/projects. Ferry projects included in the Blueprint are from the MTC's *San Francisco Bay Area Regional Ferry Plan Update* (1999) and the Bay Area Council and Bay Area Economic Forum's *Bay Area Water Transit Initiative—Bay Area High-Speed Water Transit System for the 21st Century* (1999). Rail projects were assembled from input from rail operators and from other proposals developed as part of a new rail extension reconnaissance conducted by MTC in 1998. HOV projects were based on the MTC's *High-Occupancy Vehicle (HOV) Lane Master Plan Update* (1997). In addition, MTC developed proposals for new/enhanced bus routes based on an assessment of how to improve bus services to meet new travel demands, maximize existing services, and fully utilize existing and planned HOV lanes.

Additional candidate projects were added to the preliminary list based on input from the county congestion management agencies (CMAs) and regional transit agencies. These candidate projects were largely drawn from corridor management plans, countywide transportation plans, strategic transportation plans, county transit plans, proposed new sales tax measures and other local plans and capital improvement programs. Moreover, public comments on candidate projects received at the first public outreach meeting on June 16, 1999 and/or via letters and emails were also incorporated into the Blueprint when feasible. This Blueprint Project Notebook represents a compilation of profiles for all the candidate projects proposed for consideration in the Blueprint plan.

Estimated Blueprint capital costs range from at least $22 Billion to $33 Billion. Operating costs for the Blueprint's candidate alternative trunk line systems will require at least $500 million to $830 million per year. These estimates only include definable Blueprint project costs; a number of projects are not yet well enough defined for costing purposes. As we move into the evaluation process, additional cost information will be developed.

Outreach Efforts

Stakeholder and public outreach are integral components of the Blueprint process. Since January, MTC has conducted stakeholder outreach on the Blueprint process with congestion management agencies and regional transit agencies. Staff has meet with the technical staffs and boards of several CMAs and transit agencies to discuss the Blueprint process in general and the candidate project list in detail. Outreach to our partner agencies will continue throughout the remaining Blueprint process.

The public outreach effort began with a press release announcing the first public "kickoff" outreach meeting on June 16, 1999. At this meeting, staff presented the Blueprint to over 120 people in attendance and engaged them in a discussion about various Blueprint issues related to quality of life, congestion relief, and funding strategies via use of electronic voting. Additional public outreach efforts are planned for this fall, including CMA-sponsored public meetings in each of the nine counties as well as focus groups and public opinion polls. Public input will continuously be solicited during these outreach efforts in an effort to help us refine the Blueprint proposals and funding strategies accordingly. In early spring of 2000, additional stakeholder and public outreach meetings will be conducted to develop further understanding on Blueprint findings and possible funding strategies developed during the course of this year-long planning effort.

MTC will continue to maintain extensive, up-to-date information about the Blueprint process on its Web site (www.mtc.ca.gov) and through articles and notices in MTC's newsletter, *Transactions*.

Appendix A tabulates all the public input received to date on possible candidate Blueprint projects and provides our responses to these comments. Many of the public comments and suggestions for candidate projects are reflected in the candidate projects identified for inclusion into the Blueprint Project Notebook.

For more information on the Bay Area Blueprint for the 21st Century, contact project manager Doug Kimsey at 510/464-7794 or via e-mail at dkimsey@mtc.ca.gov.

Blueprint Planning Context

Beyond the Regional Transportation Plan

The Metropolitan Transportation Commission (MTC) adopted the 1998 *Regional Transportation Plan* (RTP) in October 1998. By law, the plan may only include transportation projects that the region can afford with expected federal, state, and local revenue over the 20-year plan period. More than 80% of the RTP's $90 billion in resources are devoted to operating and maintaining the existing transportation system, yet even this sizable commitment will leave nearly $6 billion in needed local road repairs unfunded. On the transit side, a smaller but still significant funding shortfall of approximately $600 million (combined capital and operating costs) is projected — and this figure does not include recent estimates of approximately $800 million to seismically retrofit elevated structures on the BART system.

Moreover, the dynamic growth of the Bay Area will not wait until we complete the unfinished business of maintaining our existing transportation infrastructure. It is projected that by the year 2020, the region's population will increase by 16%, to 7.7 million. The number of employed residents will increase at an even faster pace, jumping by 36% to 4.3 million. This additional population and economic activity will place even greater pressures on an already stressed transportation system.

A number of disparate and (until now) uncoordinated efforts have been launched to explore improvements and expansions of the Bay Area's highway and transit networks — all of them beyond the financial reach of current resources. Now, with several potential new funding opportunities on the horizon, MTC has launched the *Bay Area Transportation Blueprint for the 21st Century*. This concentrated planning effort is an attempt to identify promising funding sources and high-impact transportation strategies that can be melded into a coherent and exciting regional transportation vision for the future. Work on the Blueprint is already under way and is scheduled to conclude early in 2000.

Revenue Opportunities

The year 2000 not only symbolizes the turning of the new century, it also marks the next opportunity for voters to consider funding measures (either at the March primary or November general elections) to implement projects in the Blueprint. These funding measures could take the following forms.

State Infrastructure Funding - The state Legislature is considering a variety of proposals for funding new infrastructure investments in California, ranging from ongoing general fund support to bond measures that might appear on the November 2000 ballot.

County Sales Tax Plans - Voters in Alameda County will likely be presented with the chance to renew the county's existing half-cent sales tax for transportation in either March or November 2000. Marin, Solano, and Sonoma County voters may have similar opportunities. Additionally, state legislation to extend or enact these special taxes by simple majority vote on a future statewide ballot was debated by the California Legislature in 1999, and will likely be taken up again in 2000. If successful, such legislation would increase the odds of success for voter-approved local sales taxes for transportation.

High Speed Rail - The California High Speed Rail Authority is developing a $20+ billion plan for building a high speed rail link between Los Angeles, the Central Valley, and the Bay Area. A financing plan (likely to involve an increase of 1/4-cent or 1/2-cent in the state sales tax) could be presented to California voters in November 2000.

BART Sales Tax Rollover - BART is considering for March 2000 a rollover of its recently expired property tax for seismic retrofit of its existing structures.

Other Potential Revenue Sources - Looking beyond 2000, a range of other funding alternatives might come into play, including the possibility of a regional gas tax, or perhaps an increase in the state gas tax.

Alternative Trunk Line Systems

If new transportation revenues do materialize, what kinds of projects should they fund? MTC is studying a range of transit, roadway, safety and other improvements that could in some combination comprise a forward-looking Blueprint for the 21st Century. As a component of the overall inventory of candidate projects, several distinct project packages are also being looked at.

Urban Rail Expansion - The region's existing rail expansion program, which was approved by the commission in 1988, already has delivered two East Bay BART extensions. The Tasman West light rail line in Silicon Valley will open in December 1999 and the BART extension to San Francisco Airport is under construction. For the Blueprint, MTC is reviewing "next generation" rail expansion alternatives, including Caltrain electrification and extension to downtown San Francisco, Muni Metro extension to Chinatown, commuter rail service using the Northwest Pacific right of way in Marin and Sonoma counties, the rail "gap" in the Fremont-San Jose corridor, additional BART extensions and other projects. Possible Bay Area connections to a high-speed rail system will also be considered.

Express Bus Service - Existing and planned high-occupancy-vehicle (HOV) lanes could be better utilized to institute greatly expanded express bus services in a variety of locations around the Bay Area. Feeder bus shuttles with timed-transfers from BART, Caltrain, the Capitols, the Altamont Commuter Service and existing ferry runs could be implemented in tandem with new express bus routes, widening the reach and convenience of this approach.

Rapid Water Transit - A major expansion of passenger ferry service on San Francisco Bay has been proposed by the business-sponsored Bay Area Council. The Council's ferry plan will be studied, along with a variety of water transit improvements included in MTC's own Ferry Plan for the region.

Roadway /Maintenance/Safety/Other - Of course, the existing shortfall in system maintenance and rehabilitation funding would give this category of projects — especially local streets and roads — a priority claim on any new revenues that might become available. In addition, selected roadway expansion and interchange improvements, seismic safety retrofits (e.g., BART and local bridges) and targeted programs like MTC's innovative Transportation for Livable Communities program (which funds neighborhood revitalization and pedestrian-oriented projects) and "lifeline" transit service proposals to aid people in the transition from welfare to work are also being reviewed for inclusion in the Blueprint.

Integrating and Evaluating Alternatives

Are all these potential transportation improvements compatible with each other? How will new transportation initiatives come together with land use planning to help the Bay Area cope with future growth? How do we ensure that the region's ongoing commitment to maintain the existing transportation system isn't forgotten in the rush to expand? As the region's transportation planning agency, MTC is uniquely positioned to answer these questions -- with the assistance of its partners in the public and private sectors.

Overall Workplan

The specific tasks necessary to produce the Blueprint plan include the following:

Develop Blueprint Context - Elements include long-range demographic projections, forecasts of corridor travel characteristics, the amount of revenue expected from new funding sources, and environmental trends and issues. This information was presented at a number of forums throughout the region to get initial input on MTC's approach.

Information Gathering - MTC staff initiated the Blueprint process by assembling the latest information on the plans, programs and projects that comprise the preliminary list of potential Blueprint candidates. MTC developed this Blueprint Project Notebook as a compilation of project information for all projects proposed for consideration in the Blueprint plan. Because of the conceptual nature of many projects, detailed descriptions are not available. Similarly, cost information may not be available and is listed as "TBD" -- To Be Determined.

Evaluation - Criteria have been developed to assess the relative merits of proposed Blueprint elements and to help develop a list of projects that could be funded with new revenues. Suggested criteria could include some or all of the following:

- Significant improvement in travel time and reliability for a large number of users
- Affordability
- Cost effectiveness
- Capacity to deliver in a reasonable time frame (exposure to cost escalation)
- Public and political support
- Community and environmental considerations

Public Outreach - An initial public "kickoff" meeting to solicit input on a draft Blueprint project list and potential evaluation criteria was held in June 1999. A second round of outreach (including public meetings, focus groups, and public opinion polling) will be conducted in the fall of 1999 to determine the level of support for various proposed Blueprint proposals and funding strategies.

Consensus Building/Stakeholder Outreach - In addition to general public outreach, MTC staff also will meet with various transportation stakeholder groups, including local elected officials and the business and environmental communities, to assess receptivity to the Blueprint proposals.

Project Oversight

The Blueprint planning effort is being overseen by MTC in cooperation with the Bay Area Partnership, which is composed of region's major transportation and environmental agencies.

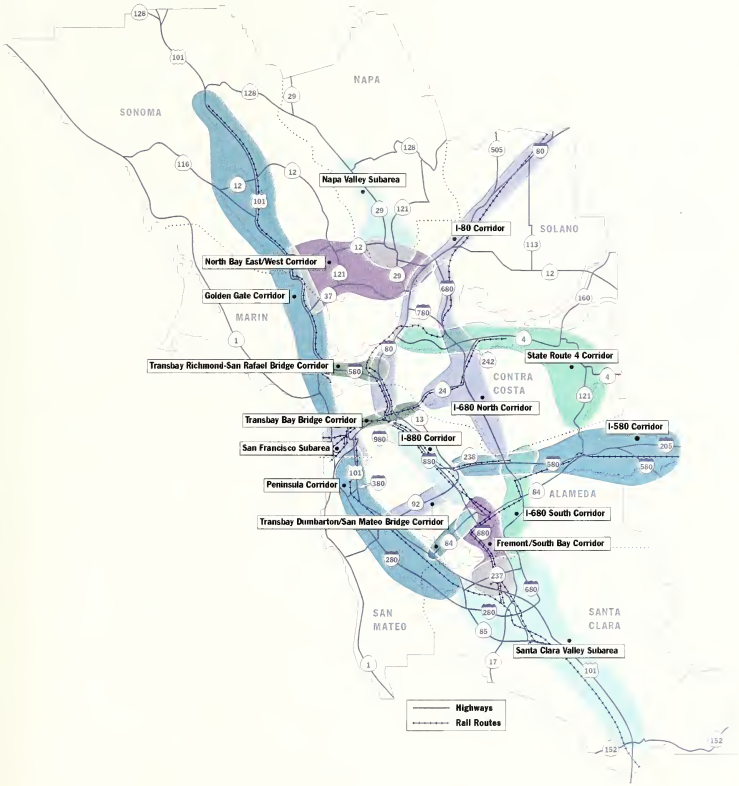
Schedule

Over the next several weeks, staff will be evaluating the relative merits of candidate projects identified in this Blueprint Project Notebook. Staff will present the findings of the evaluation in the second Blueprint work product-Evaluation Report. The evaluation will help us develop a list of project that could be funded with new revenues.

Staff will also conduct a second round of public outreach over the next several months. MTC and the CMAs will co-sponsor public workshops within each of the nine Bay Area Counties. MTC staff will also be conducting focus groups and public opinion polls to determine support for various Blueprint project proposals and funding strategies.

A final Blueprint Report that summarizes evaluation and outreach findings will be completed by March 2000.

Bay Area Travel Corridors

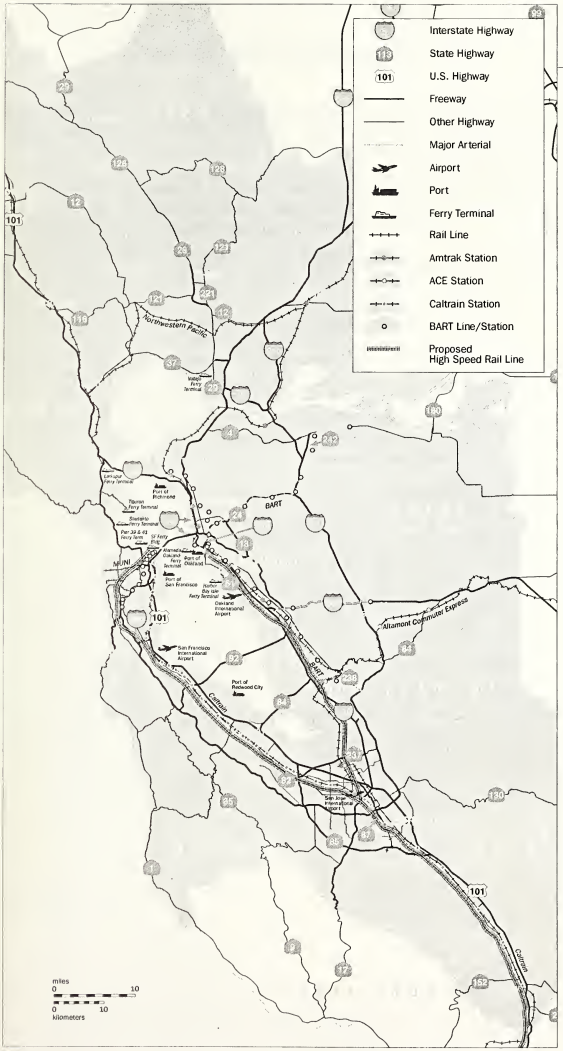


BAY AREA TRAVEL CORRIDORS

Golden Gate Corridor
North Bay East-West Corridor
Napa Valley Subarea
Interstate 80 Corridor
State Route 4 Corridor
Interstate 680 North Corridor
Interstate 580 Corridor
Interstate 680 South Corridor
Interstate 880 Corridor
Fremont-South Bay Corridor
Santa Clara Valley Subarea
Peninsula Corridor
San Francisco Subarea
Transbay Corridors

Section A

San Francisco Bay Region



San Francisco Bay Region

System Operation and Maintenance

- BART Car Replacement
- Muni Capital Program
- Strategic Replacement and Upgrade of the GGBHTD Information System
- Upgrade to Mare Island Ferry Maintenance Facility and Fuel Farm
- Transit Operating Shortfalls
- Local Street Pavement, Non Pavement, and Bridge Maintenance Shortfalls

System Management

- Freeway Traffic Operations Systems (TOS)
- MTS Arterial Signal System Upgrade
- Intelligent Transportation Systems (ITS) Regional Integration

Seismic Preparedness

- BART Seismic Retrofit Program
- Golden Gate Seismic Retrofit Phase II and III
- Local Bridge Seismic Strengthening
- Emergency "Contingency" Budget for Major Farthquake/Disaster

Life Line Transit

- 24 Hour Life Line Transit Services
- Transit Subsidies for Low Income Persons
- Transit Service Gap Improvements
- Enhanced Paratransit Services
- School Bus Service Program

Customer Services

- TransLink®
- TravInfo™ (Traveler Information System)
- Freeway Service Patrol
- Call Boxes
- Regional Transit Trip Planning and Transit Information Web Page Systems
- Regional Rideshare Program

Bicycle and Pedestrian Facilities

- San Francisco Bay Trail Gap Segments
- San Francisco Bay Trail Bridge Segments
- East Bay Regional Trail Gap Segments
- Local Bicycle and Pedestrian Facilities

Railroad Right-of-Way Preservation

- Railroad Right-of-Way Preservation

Transportation for Livable Communities

- Transportation for Livable Communities Program

San Francisco Bay Region

Regional and "Other" Projects

The San Francisco Bay Region section consists of fact sheets for candidate Blueprint projects classified as either a regional or an "other" project. The Regional/"Other" projects are those that are deemed important and beneficial to the region as a whole but cannot be easily categorized into a specific travel corridor. Most importantly, these projects are essential to making the entire Blueprint "work". They will be considered along with the "expansion" projects during the development of the Blueprint.

The candidate regional and "other" projects are organized into the following categories:

- System Operation and Maintenance
- System Management
- Seismic Preparedness
- Life Line Transit
- Customer Services
- Bicycle and Pedestrian Facilities
- Railroad Right-of-Way Preservation
- Transportation for Livable Communities Program

Systems Operation and Maintenance

Transit Capital Requirements

Project Title
BART Car Replacement

Project Description
Rebuild / replace 339 older A&B rebuilt cars and 80 C2 cars.

Project Background
The 1998 Regional Transportation Plan transit capital shortfall calculation did not include 339 A&B rebuilt cars (out of a total fleet of 439 cars) and 80 C2 which were to be repaired beyond the 20 year planning horizon. These cars are projected to require a rebuild or a replacement in and around FY 2019-2021 — the three years just after the 20-year RTP period.

Proposed Operating Scenario
None

Estimated Costs
Capital:

- 339 A&B Cars (estimated to cost $3.0 million per car in 1998$) — $1,017 billion
- 80 C2 Cars (estimated cost of $2.75 million per rebuilt cost) — $220 million

Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
The range of costs to complete this car replacement program is dependent upon a decision as to whether a rebuild or a replacement program is implemented.

Systems Operation and Maintenance

Transit Capital Requirements

Project Title
Muni Capital Program

Project Description
Implement capital projects identified in the updated Muni Capital Program that are beyond those identified in the 1998 Regional Transportation Plan (RTP).

Muni's Capital Program has been updated since the 1998 RTP to include the following additional capital projects:

- A full replacement of Muni's communications equipment
- Additional cable car rehabilitation
- Additional trolley overhead wire rehabilitation
- Rehabilitation of Muni's revenue center
- Additional rehabilitation/replacement of subway stations, train control, and other related capital projects.

Project Background
- This Blueprint "project" includes cost of certain projects in Muni's updated Capital Improvement Program.
- These additional capital costs are in addition to those included in the 1998 RTP.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $200 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
These additional rehabilitation projects serve to maintain existing Muni service.

Systems Operation and Maintenance

Transit Capital Requirements

Project Title
Strategic Replacement and Upgrade of the GGBHTD Information System

Project Description
As recommended in Strategic Plan for Information Systems, replace, upgrade and expand computer information systems to attain an appropriate level of information technology support for all business functions. This project would implement the recommended $18.5 million improvements of the Strategic Plan.

Project Background
- Interim improvements are included in the 1999 SRTP for Golden Gate Transit but were reduced in scope due to funding constraints.
- Development of a ten year Strategic Plan for Information Systems is in progress and a preliminary implementation plan is available.
- The interim project would be implemented with existing staff and would consist of upgrades to existing systems to operate on Windows NT. The strategic plan project would require significant ($11 million over 10 years) additional Information Technology staff resources.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $18.5 million (1999$)
Total Annual Operating Cost: $1.1 million (1999$)
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
The project represents 10 years of capital and operating costs for the Information Technology upgrade.

Systems Operation and Maintenance

Transit Capital Requirements

Project Title
Upgrade to Mare Island Ferry Maintenance Facility and Fuel Farm

Project Description
Upgrade Mare Island maintenance facility to a full service facility with a fuel farm to accommodate three or more boats.

Project Background
This project will be included in the Vallejo Transit/Baylink Ferry SRTP document update.

Proposed Operating Scenario
Current facilities include an interim maintenance facility and enough fuel for one day of operations. The proposed facility will include a full service maintenance facility for three boats and a fuel farm that will hold enough fuel for two weeks operations.

Estimated Costs
Capital: TBD
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
Full service maintenance facility and fuel farm is needed.

Systems Operation and Maintenance

Transit Operations

Project Title
Transit Operating Shortfalls

Project Description
The financial estimates prepared for the 1998 Regional Transportation Plan (RTP) indicate that AC Transit will be able to cover 97.3% of its 20 year operating costs, Golden Gate Transit 95.7%, and MUNI 97.5%. The Blueprint would provide funding for the remaining operating shortfalls.

Project Background
The 1998 Regional Transportation Plan does not assume the availability of any new transit operating funds over the 20-year planning horizon.

Proposed Operating Scenario
Maintain existing level of service.

Estimated Costs
The projected 20-year cumulative operating shortfalls are as follows:

Operator	Operating Deficit
AC Transit	$136.151 million
Golden Gate Transit	$73.927 million
MUNI	$215.177 million
Total	**$425.255 million**

Observations/Issues
The transit operating shortfalls need to be addressed through additional local contributions or through new revenue sources.

Systems Operation and Maintenance

Project Title
Local Street Pavement, Non-Pavement, and Bridge Maintenance Shortfalls

Project Description
Fully fund local street pavement, non-pavement, and bridge maintenance shortfalls totaling $5.6 billion as identified in the 1998 Regional Transportation Plan.

Project Background

- MTC estimates that of the $6.6 billion of pavement maintenance needed over the next 20 years, only $4.1 billion in revenues will be available, resulting in a shortfall of $2.5 billion.
- The RTP gives priority to fully funding pavement shortfalls on local roads which are part of the Metropolitan Transportation System (MTS). The RTP includes $347 million over 20 years for full funding of pavement maintenance shortfalls on MTS streets and roads. The RTP also assumes funding for 5% of the pavement maintenance shortfall on non-MTS streets and roads, which amounts to $108 million over the 20 years.
- Non-pavement maintenance consists primarily of two areas: (1) lights/safety and (2) "other" such as maintenance/ construction work related to pedestrian/bike paths, storm drains, storm damage, and all other needs. MTC estimates that the non-pavement maintenance needs could be between $633 million and $4 billion over 20 years. The RTP has adopted a moderate number of $2.4 billion for planning purposes.
- MTC estimates that bridge maintenance (reconstruction, rehabilitation, and rail replacement) to be $1,076 million over the next 20 years. The two primary funding sources for local bridge maintenance are local funds and the federal Highway Bridge Replacement and Rehabilitation Program (HBRR). The most likely revenue estimates is $324 million in revenues from the HBRR program over the next 20 years. The RTP financial analysis assumes an additional $14 million over the 20 years for funding for local bridge rehabilitation work on local streets and roads.

Proposed Operating Scenario
N/A

Estimated Costs
Capital:

- Pavement Shortfall*: $2.1 billion
- Non-Pavement Shortfall*: $2.3 billion
- Local Bridge Shortfall*: $1.2 billion

*After assignment of RTP Funds

Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
The pavement, non-pavement, and local bridge maintenance shortfalls need to be addressed through additional local contributions or through new revenue sources.

System Management

Project Title
Freeway Traffic Operations Systems (TOS)

Project Description
Complete installation of field equipment for the TOS on Bay Area freeways.

Project Background
- Caltrans has been developing the TOS and Traffic Management Center (TMC) for several years, and has installed approximately half of the needed field equipment. An upgrade to Caltrans interim TMC will be completed in 1999, and the ultimate TMC software will be available in a few years, once it is fully tested and debugged in District 7.
- The TOS consists of CCTV cameras, loop detector monitoring stations, message signs, highway advisory radio, ramp meters, and a communication system that includes the TMC, hubs, and phone lines.
- The TOS also provides important data to the TravInfo Regional traveler information system.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: The Blueprint "project" consists of $87.5 million (1997$) which will match $87.5 million in future federal/state funds for this project.

Total Annual Operating Cost: TBD
(assumes Caltrans provides ongoing operation and maintenance costs through its operating budget)
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The TOS enables detection and diagnosis of congestion (both recurring, commute-period congestion and incident-related congestion), and implementation of an appropriate response (dispatch emergency equipment, inform motorists via message signs and highway advisory radio, alter operation of ramp meters, etc).
- TOS-type projects have produced 10-20% improvement in freeway operations (e.g., increased average speed, reduced delay, lower accident rate) in other urban areas.
- This project would be implemented after Caltrans District 4 resolves recent technical issues in bringing TMC and existing field equipment on-line.

System Management

Project Title
MTS Arterial Signal System Upgrade

Project Description
Upgrade and interconnect signals on Metropolitan Transportation System arterials regionwide.

Project Background
- MTC estimates that 2000 of the Bay Area's 6000 traffic signals are on the Metropolitan Transportation System (MTS).
- This project entails replacing 2000 existing controllers with state-of-the-art controllers and interconnecting one-half of the 2000 controllers with fiber optics (assume one-quarter mile spacing between controllers).
- This project includes one new system detector for every 4 signals, and 20 city Traffic Management Centers (TMC).
- Other "smart corridor" field equipment, such as surveillance camera's and message signs, is not assumed to be part of this project.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $28.7 million (1998$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The operation of traffic signal controllers as part of a "smart corridor" is an effective means of managing traffic flows during both commute peaks and incidents. These systems typically reduce travel time by 10%, and reduce delay by over 20%.
- Controller upgrades and center-to-center communication links are necessary to implement "smart corridor" projects.
- MTC assumed that high speed data exchange for center-to-center operation requires 250 mile fiber optic backbone, and that private sector will provide half of needed backbone through negotiations over permits to build fiber optic networks. With this assumption, fiber optic backbone is still largest portion of total cost ($13.2 million).

System Management

Project Title
Intelligent Transportation Systems (ITS) Regional Integration

Project Description
Support integrated deployment of Intelligent Transportation Systems (ITS) projects in the region to reduce costs, increase effectiveness, and provide better services through appropriate uses of new technologies.

Project Background
- MTC and its partners have been developing a variety of technology-based projects for some time, including systems for freeway management, arterial signals, transit fleet management, traveler information, transit fare payment, and others.
- There have been limited efforts to create linkages among related projects, but not within an integrated program plan.
- There has not been a coordinated effort to evaluate gaps in computer and communications systems among ITS projects, and implement projects to fill those gaps to achieve improvements in system management.
- TEA-21 established the requirement that all federal-aid ITS projects need to conform to national ITS architecture and standards. Regulations to implement that mandate are expected in early 2000.
- MTC is commencing work on a regional ITS strategic plan and technical architecture.

Proposed Operating Scenario
- Complete and maintain a regional ITS strategic plan, coordinated with the overall Blueprint, RTP, and programming activities.
- Complete and maintain a regional ITS architecture to provide technical guidance to ITS project sponsors.
- Identify and implement projects that are needed to close priority gaps identified in the regional ITS strategic plan, including: (1) core communications links, (2) software interfaces between systems, and (3) incorporation of national data and interface protocol standards.
- Provide technical support to project partners in project design and implementation.
- Ensure integration of Bay Area ITS activities with emerging state-wide architecture and program.

Estimated Costs
Capital: TBD
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Individual ITS projects may be successfully implemented in isolation, but significant Metropolitan Transportation System (MTS) management improvements may be achieved by ensuring appropriate integration across some of these projects.
- There may be needs for communications links or software development that do not fall within the scope of particular projects or within the jurisdiction of project sponsors. Multi-agency regional projects may need to be developed to fill these gaps.
- Significant training and technical support functions need to be developed for the long-term to enable partner agencies to develop, operate, maintain, expand, and, eventually, replace these high-technology systems. This can be most cost-effectively done in a regional program.

Seismic Preparedness

Project Title
BART Seismic Retrofit Program

Project Description
Seismically retrofit BART system which is to be implemented in five segments, prioritized by need and funding availability.

- Segment 1: Caltrans Local Seismic Retrofit Program
- Segment 2: Lifeline Program
- Segment 3: Additional Critical Aerial Structures and Stations Program
- Segment 4: Aerial Structures and Aerial, At-Grade and Underground Stations Program
- Segment 5: All Other BART Facilities Program

Project Background
- The original system is designed to seismic performance levels well above the standards of the time.
- Only hours after the Loma Prieta earthquake, the BART system was in service and provided the Bay Area with a critical transit lifeline.
- The current BART policy is to have a system which could withstand a Maximum Credible Earthquake (MCE) and to return service with minimal delay after such event.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $800 million (1999$)
(Approximately $230 million was included in the 1998 RTP but this amount is roughly equivalent to the BART capital shortfall, hence has been included as a part of the Blueprint seismic retrofit project.)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- According to the U.S. Geological Society Working Group on California Earthquake Probabilities in 1990, there is a one in four probability that a magnitude 7 earthquake will occur at the two Hayward fault segments and the Peninsula segment of the San Andreas fault within the next 30 years.
- Seismic design has advanced considerably in the last decade, incorporating what has been learned from the experience of recent large earthquakes.
- New techniques have been developed for retrofitting large existing structures, like BART stations and aerial trackways, to more securely withstand major seismic forces.
- The five segment retrofit program would implement seismic improvements throughout the system.

Seismic Preparedness

Project Title
Golden Gate Seismic Retrofit – Phases II and III

Project Description
Retrofit the bridge, strengthening it to withstand a maximum creditable earthquake of 8.3 on San Andrea Fault, in three construction phases. Phase I is north anchorage. Phase II includes implementation of seismic retrofit measures to the south viaduct, south anchorage housing, Fort Point Arch, and pylons S1 and S2. Phase III includes implementation of seismic retrofit measures to the suspension bridge, south pier and fender, north pier, north anchorage, and pylon N1.

Project Background
- The project is partially funded in Track 1 of the 1998 RTP (Phases 1 and 2 are funded.) The Blueprint would accelerate the delivery of this project.
- Project will be completed in three phases. Phase I is fully funded by a reserve created from the increase in bridge toll to $3.00 in 1991 and is scheduled to be completed by the end of FY 1999/00.
- Known project funding to come from a variety of sources including bridge tolls and Federal TEA-21 earmarks.

Proposed Operating Scenario
N/A

Estimated Costs
Capital:
Construction Costs (1998$):

Phase I:	$69 million (fully funded with District reserves)
Phase II:	$120 million ($57 mill TEA-21 funds committed)
Phase III:	$108 million (unfunded)
Total cost:	$297 million
Shortfall:	$171 million

Total Annual Operating Cost: N/A

Farebox Recovery Assumed: N/A

Net Annual Operating Cost: N/A

Observations/Issues
Seismic retrofit is the top priority for the Bridge District.

Seismic Preparedness

Project Title
Local Bridge Seismic Strengthening

Project Description
Based on a Caltrans biannual inspection of the 2,040 local bridges in the Bay Area, 12 percent require reconstruction; 45 percent need rehabilitation; 13 percent need seismic retrofitting; and 40 percent have substandard barrier rails.

Project Background

- Seismic Retrofit Costs: Senate Bill 36X required local agencies to implement seismic retrofit of local bridges to correct "serious" seismic dangers. All local bridges are screened based on a series of judgment factors – such as the age of the bridge, number of spans, as-built drawings, area of seismic activity, etc. The costs are paid by the State of California. The bridges projected to require "mandatory seismic retrofit" (268) receive first priority for money. The work receives priority over regular bridge repair projects. The revenue necessary for seismic upgrades will delay other types of bridge repairs, increasing shortfalls over the 20-year period.
- The estimated shortfall for local bridges is $181 million. A portion of this shortfall in the RTP is funded with federal Highway Bridge Replacement and Rehabilitation funds and flexible federal TEA-21 funds.

Estimated Costs
Capital: $144 million*
*After assignment of RTP funds
Total Annual Operating Cost:
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
The local bridge seismic strengthening shortfalls need to be addressed through additional local contributions or through new revenue sources.

Seismic Preparedness

Project Title
Emergency "Contingency" Budget for Major Earthquake / Disaster

Project Description
The Blueprint "project" consists of a contingency budget that will cover transit "operating" costs for services and activities required to respond to a major earthquake above and beyond "normal" operating costs. Funds can also be used to cover local matching requirements for state and federal disaster fund programs or serve as a "loan" pool for agencies experiencing unanticipated cash-flow situations. These funds would be deposited in an "escrow" account to be used when needed.

Operating Expenses
- Expanded hours for transit operations and Freeway Service Patrols
- Extended feeder services
- Increased ferry services
- New shuttle services
- Increased Freeway Traffic Operations System (TOS) operations and maintenance

Capital Expenses
- Immediate repairs to transit facilities in order to operate
- Repaving airport runways, parking lots, access roads
- Structure damages to ferry docking facilities
- HOV lane striping
- Track alignments and repairs
- Additional equipment needs (train cars, buses, vessels, etc.)

Other "Eligible" Expenses
- Lost toll revenues on state bridges
- Temporary "loan" to provide local match to state/federal disaster programs
- Temporary "loan" to agencies experiencing cash-flow problems
- Possible costs to rent facilities for joint briefings, FEMA workshops, etc.

Project Background
- Builds on the Bay Area Partnership's emergency Trans Response Plan (TRP).
- Recognizes the importance of transportation response as vital to economic recovery in the Bay Area.

Proposed Operating Scenario
To be used to respond to immediate needs following a major earthquake.

Estimated Costs
(for one month only)
Capital: $9 M for immediate needs; additional funds in an amount to be determined for recovery needs and to provide "loan" for local matching funds

Operations: $17 M (based on Loma Prieta claims plus estimated "new" services/ activities)

Observations/Issues
- According to the U.S. Geological Society Working Group on California Earthquake Probabilities in 1990, there is a one in four probability that a magnitude 7 earthquake will occur at the two Hayward fault segments and the Peninsula segment of the San Andreas fault within the next 30 years.
- Estimates are based on actual emergency operating expenses incurred by operators for one month following Loma Prieta earthquake (which was mild in comparison to anticipated North Hayward fault).
- Estimates exclude repairs or replacement of major transit facilities (bus maintenance buildings, communication/ radio/ dispatch facilities, non-urgent damages to communication towers, etc.) which are assumed to be "recovery" activities.
- Estimates to be developed for local match requirements to state/federal grants.

Seismic Preparedness

Draft Emergency "Contingency" Budget for Major Earthquake / Disaster

Operator	Service/Activity for one month	Operating	Capital
AC Transit	New Bridge services Extended Feeder Services Structure Damage	$3,195,745	$639,050
BART	Extended Service Hours Repairs to Damages	0	$2,684,010
Caltrain	Extended Service Hours	$90,745	$31,953
CCCTA	Supplemental Feeders & Shuttles	$113,495	
GGBHTD	Additional Bus & Ferry Services Structure Damage	$112,728	$528,494
SF Muni	Supplemental Services/Shuttles Trolley Overhead	$93,749	$1,278,100
Samtrans	Supplemental Feeder Services Capital	$131,044	$326,657
SCVTA	Expanded Santa Cruz Services Capital	$67,739	$69,912
Vallejo	Additional Bus & Ferry Services Traffic Control @ terminal Parking Improvements	$35,787	$76,686
WCCCTA	Ferry Feeder Services	$3,834	
Port of SF, Oakland, Richmond, Berkeley	Ferry Dock facilities/ Parking New/Expanded Ferry Services	$815,236	$1,533,720
Capital Corridor	Expanded Service (add one add'l roundtrip)	$572,222	
Altamont Commuter Express (ACE)	Expanded Service Hours (one add'l commute train)	$191,666	
Caltrans/CHP	Expanded HOV enforcement Increased Towtruck Service HOV lane striping	$81,159 $103,526	$1,821,293
Freeway Service Patrols	Extended hours: 4 add'l hours per day using 30 trucks for one month	$151,200	

Seismic Preparedness

Operator	Service/Activity for one month	Operating	Capital
RIDES	Expanded Operating Hours	$83,077	
Solano County Inter-city BART express.	Expanded Operating Hours	$151,583	
TravInfo	Expanded Operating Hours to cover weekends for one month	$19,000	
New/Expanded Joint Fare Instruments	New instruments likely to be introduced to maximize patron convenience (pending TransLink®)	TBD	
All operators	Additional Public Information	TBD	
MTC BATA	Lost Toll revenues for bridges	$11,082,387	
Airports, seaports	Repairs to runways, docking facilities are likely		TBD
TOTALS		**$17,095,428**	**$8,989,874**

Assumptions:

1. Same costs for operating and capital as required following Loma Prieta earthquake, but escalated from'89 to '99 dollars for one month (inflation factor used is 1.2781) although some capital costs were one-time expenses (ie. Paving parking lots, repairs)
2. Newly identified operators or activities (ACE, Capital Corridor,TravInfo, FSP, Callbox services to be increased) are those that have been introduced since Loma Prieta earthquake occurred. Only operating estimates are provided.
3. Airport and seaport emergency repairs are likely but estimates are unknown at this time.

Other types of expenses to cover:
Roads repaving due to liquefaction and/or landslides. ABAG's research with Caltrans identified that highway pavement repairs after Loma Prieta totaled $23,636,000 for 88.6 kilometers of roadway. This is approximately $266,772 per kilometer (of paving state highways due to liquefaction/landslides). ABAG could not identify a parallel amount for repaving of county arterials because there was no centralized summary of roadway repaving done by public works depts.

Life Line Transit

Project Title
24 Hour Life Line Transit Services

Project Description
Provide 24-hour transit services in most urban and transit-dependent areas.

Project Background
- Alameda County Welfare-to-Work Transportation Planning Project has identified eight county corridors where 24-hour services should be considered for implementation.
- MUNI already operates "Owl" services (from 1 to 5 AM) for an equivalent of 13 regular routes. No other counties currently have 24-hour services.

Proposed Operating Scenario
- Alameda County corridors are: International/E 14th, San Pablo, MacArthur, Telegraph/Shattuck/ University, Hegenberger/73rd Ave, Hesperian/Union City Blvd, Fremont Blvd, and I-580 in Livermore/Pleasanton/Dublin. Existing services currently operate 18-20 hours per day (AC Transit only), thus expanded service would require additional 4-6 service hours.
- Other logical corridors would be along El Camino on the Peninsula and in South Bay, US101 Corridor between Gilroy, San Jose, Palo Alto and San Francisco Airport, Transbay (AC Transit and/or BART), US101 Corridor between San Francisco, San Rafael and Santa Rosa, I-680 Corridor between Pleasanton, Walnut Creek and Concord.
- In addition to trunk line transit routes, enhanced short-range services to home neighborhoods and work centers in the most urban areas could be needed, such as expanded paratransit or taxi services.

Estimated Costs
Capital: TBD
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
Life line transit services are only at conceptual definition stage at present time.

Life Line Transit

Project Title
Transit Subsidies for Low Income Persons

Project Description
Provide free or reduced fare transit passes for low income residents of the nine Bay Area counties.

Project Background

- MTC's Welfare to Work Transportation Planning efforts have confirmed that the cost of using public transportation can be significant for low income individuals, particularly those who are working split or short shifts, making long trips, transferring between systems or transporting children who must pay fares. In some areas, the cost of transit services may be forcing individuals to limit their job searches to nearby areas and to times of day that transit is available. This may preclude employment in certain sectors.
- The funding for low income subsidies must come from new sources of funding in order to avoid a negative affect on existing transit service levels.
- TransLink® is being designed to provide a mechanism to account for special subsidies for transit services throughout the region.

Proposed Operating Scenario

- With a dedicated source of funding, eligibility for fare subsidies can be administered through existing programs that oversee benefits for low income persons. Under the TransLink® universal fare card program, a person receiving the subsidy would have the value of that subsidy added to their TransLink® card by the sponsoring agency, or the individual's trip could be deducted at a lower fare, charged back to the sponsoring agency, and returned as a full value fare to the transit agency through the TransLink® central clearinghouse.

Estimated Costs
Capital: N/A
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
(Current farebox return would be maintained or increased for transit agencies.)
Net Annual Operating Cost: TBD

Observations/Issues

- In certain counties the majority of welfare recipients and low income individuals are transit dependent.
- Many job opportunities (and available child care) require traveling outside a person's home neighborhood.
- Many job opportunities require transfers among transit operators.
- Many job opportunities are part-time or swing shift which increases the proportion of a person's income that is needed for transportation.
- There are opportunities for financial partnerships with county human services agencies and community based organizations who are looking for a mechanism to make transit services more economically accessible to low income persons.

Life Line Transit

Project Title
Transit Service Gap Improvements

Project Description
Develop, fund and implement program of improvements in fixed route and flexible public transit services to close gaps between low income neighborhoods and key employment clusters.

Project Background

- The lack of transit to access key employment sites in a 24-hour economy has been identified in MTC-sponsored welfare to work transportation plans. Specific transit improvements have been proposed in some counties. These are to be supplemented by MTC analyses conducted for this Blueprint.
- In the Bay Area's regional economy, many job opportunities require individuals to cross jurisdictional boundaries.
- There is a lack of transit service in some areas of job growth.

Proposed Operating Scenario
To be determined based on Ron West's analysis.

Estimated Costs
Capital:TBD
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
MTC GIS-based analyses show significant service gaps to key employment sites at times of day and in certain corridors where there is insufficient access from trunk line transit services to job sites.

Life Line Transit

Project Title
Enhanced Paratransit Services

Project Description
- Provide enhanced paratransit service beyond that legally required by ADA.
- Provide and promote enhanced coordination of paratransit services between operators serving ADA-eligible individuals and with other services provided by social services programs.
- Improve paratransit travel across service boundaries by (1) making capital improvements at regional paratransit transfer points; (2) streamlining the process for persons to schedule inter-agency paratransit trips; and (3) implementing a single regional paratransit fare payment system in coordination with TransLink®.

Project Background
- Within the Bay Area, 21 public transit operators are responsible for the provision of complementary paratransit services as required by the ADA.
- Demand for paratransit services, both for ADA eligible persons and for others, has caused an increase in paratransit costs from $20 million in 1995 to over $60 million in 1998. Without new revenues to offset these costs, transit operating budgets have had to support increased amounts, which has limited other transit service improvements.
- MTC's role has been to facilitate coordination of services, especially where such coordination enhances access of the services by the user.
- With the aging of the population, demand for paratransit service is expected to outpace the region's ability to fund service expansion, especially for those individuals who do not meet ADA eligibility requirements but who nonetheless need a safety net of transportation services when they are no longer able to transport themselves.
- The region, through partnership of the transit agencies and MTC, has made significant strides to coordinate paratransit services and has adopted interagency service guidelines which will require new funding to implement fully.

Estimated Costs
Capital:
- $900,000 (1999$) for nine transfer locations
- $4.04 million (1999$) for fare payment system (included in TransLink® project budget)

Total Annual Operating Cost:
- $60 million for paratransit funded in 1998
- Additional funding needed for service growth through 2020: TBD
- Funding for establishment of transportation broker for human services transportation: TBD

Observations/Issues
The primary challenge for transit operators responsible for the provision of paratransit services is to provide those services in a cost-effective manner. MTC is providing the region's operators with technical assistance to help them identify and test service strategies for operating more efficiently. Long-term operation of these strategies will require new funding, although at presumably less expense than the expected cost of expanded demand-response paratransit services.

Life Line Transit

Project Title
School Bus Service Program

Project Description
Provide school bus service as a transportation link for parents transitioning from welfare to work and to supplement public transit where needed.

Services to be provided could include:
- Access to school for children of parents transitioning from welfare to work.
- Matching funds to school districts for capital and operating costs.
- Fare discounts for students riding public transportation to school.

Project Background
- With the implementation of Proposition 13, many school districts found school bus service to be cost prohibitive and scaled back bus service
- School districts that have maintained bus service transport 6% to 21% of their total student population. Provision of service varies depending on each district's ability to fund school bus programs.
- When schools are in session, parents transporting children to and from school contribute to peak period congestion on local roads.
- Public bus systems may not have the resources to adequately provide service to schools within their service area.

Proposed Operating Scenario
N/A

Estimated Costs
There are models for cost sharing of school transportation costs between parents, schools, and other funding sources such as local transportation taxes.

Capital: TDB if procurement of school buses is needed
Total Annual Operating Cost: $24 M (includes leases/operating costs)
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: NA

Observations/Issues
- There are 955,843 children enrolled in grades K-12 throughout the Bay Area. Of those, only 105,664 are currently using school buses to get to school (California Department of Education, 1997).
- Many transit operators are unable to cost effectively serve this travel market.
- New California driving laws will reduce carpooling to high schools due to restrictions on new drivers transporting children between the ages of 16 to 18.

Customer Services

Project Title
TransLink®

Project Description
Design, build, operate and maintain a universal transit card system that will enable transit riders to access any transit service in the region using a single ticket. TransLink® will be based on a duel-interface smart card, implement a central clearinghouse for financial settlement and reporting, and provide an widely accessible distribution and customer service system.

Project Background
- Ten-year contract awarded to Motorola to design, build, operate and maintain TransLink® program
- Design phase of project to be completed in May 2000
- Demonstration phase to begin revenue service in October 2000
- Full regional implementation to begin in October 2001

Current Operating Scenario
- Deploy card reading equipment at each station and on every bus and light rail vehicle in the Bay Area
- Implement a computer network capable of capturing and managing transaction data generated by the system
- Fund operation of customer services that include: card distribution and re-load, toll-free customer phone support (both automated and live operator), and internet access and support
- Fund transit operator support services that include: depot maintenance, on-going training programs, operations and maintenance help desk, and on-site maintenance
- Implement programs which provide greater access for persons who are transit dependent and those who are subsidized by their employers.

Estimated Costs
Capital:
Replace equipment:
Paratransit: $14 million

Total Annual Operating Cost:
Paratransit: $250,000

Observations/Issues
- Provide funding for capital replacement of equipment and computer systems, beginning in year7-10 of the program.
- Implement TransLink® on the region's paratransit systems; the current budget provides for the region's fixed route fleet.

Customer Services

Project Title
TravInfo™, The Bay Area's Advanced Traveler Information System

Project Description
Provide enhancements and improvements to existing and proposed future TravInfo™ operations and infrastructure.

Project Background
- Operated as federally-funded field operational test from September 1996 to September 1998.
- In a transition phase from October 1998 to June 2000.
- System Manager will take over operations in July 2000 under a 5 year contract.

Proposed Operating Scenario
- Deploy and operate a complete data collection and interface system to allow for the dissemination of substantially more real time traffic and transit information. (To be accomplished in part through expansion and improvement of the TOS; additional investment is needed to improve data fusion to serve traveler information needs.
- Fund services for toll-free access number for TravInfo™ information
- Develop speech recognition system to provide a better user interface
- Fund live operators as necessary to provide information beyond what is provided by the automated system

Estimated Costs
Capital: TBD for replacement
Total Annual Operating Cost:
Additional $2 million/year (beyond $4.8 million/year in 1998 RTP) to improve data collection and fusion, toll free phone services and live operator assistance

Observations/Issues
These enhancements and improvements will make TravInfo™ more useful to Bay Area travelers both by improving the data available, thus making decision-making easier and more efficient, and by improving the methods in which travelers receive access to the information.

Customer Services

Project Title
Freeway Service Patrol (FSP)

Project Description
Provide enhancements and improvements to existing and proposed future Freeway Service Patrol (FSP) operations and infrastructure.

Project Background
- FSP is a partnership program between Caltrans, the California Highway Patrol and the MTC SAFE (Metropolitan Transportation Commission Service Authority for Freeways and Expressways).
- FSP is the Bay Area's freeway incident removal program in operation since 1992.
- There are currently 28 beats that cover 332 centerline miles with 59 tow trucks.
- Approximately 100,000 incidents are cleared each year providing a substantial relief in congestion, improvement in air quality and safety benefits.

Proposed Operating Scenario
- Provide fleet management and dispatch operations in Oakland Transportation Management Center (TMC).
- Add 8 to 12 additional freeway segments (beats) to cover the Bay Area network during commute hours.
- Upgrade telecommunications system.

Estimated Costs
Capital: $1.25 million ($1999$)
Total Annual Operating Cost: $400,000 for one-time consulting costs plus $2.05 million annual operating cost
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Currently, FSP dispatchers work out of the CHP offices in Vallejo. Dispatching and fleet management operations logically should take place at the TMC in Oakland.
- While FSP covers the most congested freeway segments, recent studies show that FSP is or will be justified with eight to twelve additional segments.
- The communication system is composed of voice, data and AVL (automatic vehicle location) components. The system hardware and software should be assessed and upgraded as needed every five to seven years.
- Currently, FSP and Call Box networks are physically and functionally separated. Integration efforts should be accomplished to co-locate these functions and adhere better communication with the Transportation Management Center and the Private Call Answering Center.

Customer Services

Project Title
Call Box Program

Project Description
Operate a motorist aid program that provides motorists with a direct telephone connection to a call answering center capable of contacting the appropriate assistance—California Highway Patrol (CHP), Freeway Service Patrol (FSP), or a private tow service.

Project Background
- The Call Box Program is a partnership between the MTC SAFE (Metropolitan Transportation Commission Service Authority for Freeways and Expressways), the California Highway Patrol, and Caltrans.
- The MTC SAFE installed yellow call boxes on roadsides in the nine county Bay Area in 1989.
- Over 14,000 calls are placed each month using 3,500 MTC SAFE call boxes on freeway roadsides.

Proposed Operating Scenario
- Assist Caltrans in upgrading the call boxes on bridges to MTC SAFE call boxes.
- Assist in implementation of an additional dial in number to CHP (e.g., 511) to separate true 911 emergencies from incident reports from motorists using cellular phones.
- Assist Caltrans and CHP in improving the use of call boxes for freeway incident management through expansion of call box capabilities (e.g., traffic flow monitoring, CCTV surveillance transmission) and through further integration of call box operations into the Caltrans Transportation Management Center (TMC).
- Upgrade call box network from the current analog system to a digital system.

Estimated Costs
Capital: TBD
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Caltrans owns and operates the current call boxes on bridges. These call boxes do not provide two-way communication, and they have deteriorated and are unreliable.
- The CHP Communication Center is overwhelmed with cellular 911 calls. A separate contact number would allow motorists to notify the CHP of incidents on the highway while keeping the 911 emergency lines free for true emergencies. Integration of this system could also support or replace the loop system for incident detection now used by Caltrans in the TMC.
- Currently, FSP and call box networks are physically and functionally separated. Integration efforts are needed to co-locate these functions and achieve better communication with the TMC and the private Call Answering Center. Additional traffic management benefits can be realized by expanding the functionality of the call boxes to include video and traffic flow surveillance.
- The call box system currently utilizes an analog cellular network. As better service becomes available on digital networks and analog systems are phased out, the MTC SAFE will need to address upgrading to a digital cellular phone system in the call boxes.

Customer Services

Project Title
Regional Transit Trip Planning and Transit Information Web Page Systems

Project Description
- Upgrade and maintain the regional transit trip planning (TranStar) system and transit information web page.
- Extend the use of the TranStar system to all transit operators in the region.
- Develop and maintain the TranStar data in a manner that it can be used for other applications and purposes.

Project Background
- MTC in conjunction with the region's transit operators operate a regional transit information web page, which includes route, schedule and fare information for all transit systems in the region on one web site.
- MTC and the region's transit agencies are currently developing a automated transit trip planning system (Transtar) that will provide information and itineraries for any transit trip in the region. The system will be made widely available to the public through the transit agencies' telephone information centers and on the Internet. This service responds to a key concern that existing transit information is not well coordinated and difficult to access, thereby limiting transit use.
- The TranStar system will greatly enhance the ability of transit operators to provide accurate information about transit service throughout the region.
- Because access to the TranStar trip planning system will be integrated into the existing transit information web page, the system will provide an alternative to congested telephone lines and be available when information centers are closed.

Proposed Operating Scenario
- MTC will provide overall management for the TranStar system and the communication network. This includes responsibility for system maintenance and development and oversight for data entry and maintenance.
- Each transit operators is responsible for its own transit information contained in TranStar. Each operator provides data such as current schedule, fare and bus stop information in appropriate formats for uploading into TranStar. Transit Operators are also responsible for verifying that the data, after entered into TranStar, is valid and accurate.

Estimated Costs
Total Annual Operating Cost: $2.2 million (in year 2003 costs).
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
The first four years of project implementation are funded. The remaining 16 years covered by the Blueprint would include:
- annual costs for transit data collection (schedules, fares, routes, etc.) and updates;
- hardware and software maintenance, upgrade and replacement;
- frame relay communication system maintenance;
- web page maintenance and development

Customer Services

Project Title
Regional Rideshare Program

Project Description
Increase the mobility of the Bay Area public by providing a regional information broker for transportation alternatives, including marketing and outreach to employers and the public. Provide ridematching services to facilitate the formation of carpools and vanpools, information on public transit and other options, and direct assistance to employers and individuals to access transportation alternatives.

Project Background

- The region's rideshare program has been in existence for over 20 years. MTC, in financial partnership with the county CMAs, assumed responsibility for Regional Rideshare Program from Caltrans in 1995.
- Ridematching database contains approximately 15,000 active records; about 900 vanpools are in operation in the Bay Area; several regional campaigns exist to promote transportation alternatives to the single occupancy vehicle; Commuter Check program encourages employers to provide tax-free transit as an employee benefit.
- Program has effectively provided information services during regional emergencies (e.g. BART strike, natural disaster) and in response to disruptions in major travel corridors.

Proposed Operating Scenario

- Maintain current service levels through a single regional contract managed by MTC.
- Take advantage of new technologies by integrating GIS capabilities into the ridematching system, improving Internet access and developing links to other regional customer service projects such as the Transtar transit trip planning system and TravInfo. These steps will improve the range of information services available to the public.
- Further expansion of the Commuter Check program and creation of a subsidized van purchase program or development of other incentives to promote shared-ride transportation are possibilities.
- To improve access to rideshare services by low income and non-English speaking persons, the rideshare program is expanding its role as an information broker for social services programs (including CalWORKs), workforce development programs and child care referral systems. This will require an increase in resources to provide multi-lingual services and expand live-operator assistance. The costs associated with this element can be shared with county social services programs.
- Develop, fund and implement a Guaranteed Ride Home (GRH) program for the nine Bay Area counties to encourage transit use and ridesharing, and to provide a "safety net" for those who are transit dependent.

Estimated Costs
(1998 RTP includes $2.8 million/year)
Capital:

- Update ridematching system: TBD
- Start-up revolving fund for vanpool formation: TBD
- Standard capital replacement over 20-year period: TBD

Increase Annual Operating Cost:

- Basic operations: $1.5 million/year
- Regional Guaranteed Ride Home Program: $1 million/year

Bicycle and Pedestrian Facilities

Project Title
San Francisco Bay Trail Gap Segments

Project Description
Construct remaining 170 miles gap segments of the Bay Trail (not including bridge crossings). Some notable gap segments are listed below.

Project Background
- State Senate Bill 100 (Lockyer), passed in 1987, advanced the concept of a "Ring around the Bay" and directed ABAG to develop an alignment for the Bay Trail as well as funding and implementation plans.
- Bay Trail Plan was adopted in 1989.
- Implementation of the Bay Trail is being coordinated by the Bay Trail Project, a nonprofit organization housed at ABAG.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $59.19 million (total) (1999$)
- $25.19 million (for gap segments listed)
- $34.0 million (for remaining gap segments, estimated construction cost of $200,000/mile)

Total Annual Operating Cost: Approx. $2.55 million (estimated maintenance cost of $15,000/mile/year)
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- When complete, the Bay Trail will be a continuous 400-mile multi-use trail that will encircle and cross San Francisco and San Pablo bays, linking the shorelines of all nine counties in the Bay Area and 47 of its cities. About 215 miles of the Bay Trail, or slightly more than half its ultimate length, has been developed.
- The Bay Trail provides easily accessible recreational opportunities for outdoor enthusiasts, including hikers, joggers, bicyclists and skaters. It also offers a setting for wildlife viewing and environmental education, and it increases public respect and appreciation for the Bay.
- The Bay Trail provides a commute alternative for cyclists, and it connects to numerous public transportation facilities, including ferry terminals, light-rail lines, bus stops and Caltrain, Amtrack, and BART Stations. Also, the Bay Trail will eventually cross all the major Bay Area toll bridges.
- The Bay Trail provides access to commercial, industrial and residential neighborhoods; points of historic, natural and cultural interest; recreational areas like beaches, marinas and fishing piers; and over 130 parks totaling 57,000 acres of open space. It passes through highly urbanized areas like downtown San Francisco as well as remote natural areas like the San Francisco Bay National Wildlife Refuge.

Bicycle and Pedestrian Facilities

Bay Trail Gap Segments (County) (Total Cost) (Total Miles):

Total Cost: $ 25.19 million
Total Miles: 39.23 miles

- Coyote Creek (Santa Clara) ($1.8 million) (2.8 miles)
- Alviso Marina (Santa Clara) ($500,000) (1.5 miles)
- Moffett Field (Santa Clara) ($210,000) (0.7 mile)
- East Bayshore Freeway (San Mateo) ($5 million) ((2.0 miles)
- Burlingame Bayfront Trail (San Mateo) ($1.5 million) (0.25 mile)
- San Francisco Airport Alignment (San Mateo) ($8 million) (4.2 miles)
- South San Franscisco Bayfront Trail (San Mateo) ($100,000) (1.2 miles)
- Southeast San Francisco—Hunters Point Shipyard (San Franscisco) ($100,000) (0.2 mile)
- Shoreline Industrial Park Green (Marin) ($90,000) (0.3 miles)
- Lakeville/Leveroni/Napa Road (Sonoma) ($140,000) (14.0 miles)
- Glen Cove Park (Solano) ($150,000) (0.5 mile)
- Lake Merritt to Estuary Park (Alameda) ($500,000) (approx. 1 mile)
- Pt. Pinole to Carquinez Strait (Contra Costa)
  - Pt. Pinole to Wilson Pt. ($750,000) (2.25 miles)
  - Wilson Pt. To Bayfront Park ($2 million) (1.25 miles)
  - Bayfront Park to Lone Tree Pt. ($2 million) (2.5 miles)
  - Lone Tree Pt. To Carquinez Bridge ($200,000) (3.25 miles)
- Oyster Bay to Martin Luther King Jr. (Alameda)
  - Bridge between Oyster Bay and Sewer Treatment ($950,000) (approx. 0.25 miles)
  - Trail from Sewer Treatment to Airport Blvd. ($200,000) (approx. 0.33 miles)
  - Garretson Pt. To Curt Flood Field (Damon Slough Bridge Trail Improvements) ($1 million) (approx. 0.75 miles)

Bicycle and Pedestrian Facilities

Project Title
San Francisco Bay Trail Bridge Segments

Project Description
Construct remaining bridge segments of the Bay Trail:

- San Francisco/Oakland Bay Bridge-West Span ($65 million)
- Richmond/San Rafael Bridge ($93.4 million for 2-way, 12-14 foot wide structure)
- San Mateo-Hayward-Bridge ($50 million for trestle section, $84 million for a new 13.5-foot bridge or $123 million to cantilever to the existing bridge)

Project Background

- State Senate Bill 100 (Lockyer), passed in 1987, advanced the concept of a "Ring around the Bay" and directed ABAG to develop an alignment for the Bay Trail as well as funding and implementation plans.
- Bay Trail Plan was adopted in 1989.
- Implementation of the Bay Trail is being coordinated by the Bay Trail Project, a nonprofit organization housed at ABAG.
- Bay Trail bridge segments include the following toll bridges: Benicia-Martinez, Carquinez, Dumbarton, Golden Gate, Richmond-San Rafael, San Francisco-Oakland, and San Mateo-Hayward.
- MTC Bay Bridge committee agreed to include a bike/pedestrian path on the proposed new east span.
- Subsequent State legislation authorized bridge tolls to be used for providing bike/pedestrian path on the west span of the Bay Bridge, but Transbay Terminal improvements are competing for the same funds.
- Caltrans' recent bicycle/pedestrian access study of the Richmond-San Rafael Bridge concluded that a new attached parallel path needs to be added due to maintenance and safety issues on existing deck.
- Regional Measure 1 provides funding to widen San Mateo Bridge's trestle portion and approaches to 3 lanes in each direction.
- Bicycle activists requested that Caltrans provide for access to the widened San Mateo Bridge's trestle portion in anticipation of future replacement of the existing 6-lane high rise portion or additional funding to continue a separate bike/pedestrian path adjacent to the high rise portion.
- The Bay Conservation and Development Commission (BCDC) subsequently granted Caltrans a construction permit for the trestle widening without requiring direct bicycle/pedestrian access.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: Approx. $381.4 million (assumes most costly alternatives)
Annual Operating Cost: Approximately $225,000 (estimated maintenance cost of $15,000/mile/year)
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Bicycle and Pedestrian Facilities

Observations/Issues

- When complete, the Bay Trail will be a continuous 400-mile recreational corridor that will encircle and cross San Francisco and San Pablo bays, linking the shorelines of all nine counties in the Bay Area and 47 of its cities.
- The Bay Trail provides easily accessible recreational opportunities, a setting for wildlife viewing and environmental education, and it increases public respect and appreciation for the Bay.
- The Bay Trail provides a commute alternative for cyclists, and it connects to numerous public transportation facilities, including ferry terminals, light-rail lines, bus stops and Caltrain, Amtrack, and BART Stations.
- The Bay Trail provides access to commercial, industrial and residential neighborhoods; points of historic, natural and cultural interest; recreational areas like beaches, marinas and fishing piers; and over 130 parks totaling 57,000 acres of open space. It passes through highly urbanized areas like downtown San Francisco as well as remote natural areas like the San Francisco Bay National Wildlife Refuge.
- Although bicyclists would like to use existing 12 foot shoulder on Richmond-San Rafael Bridge, Caltrans has determined that bike/pedestrian shoulder access would inhibit on-going bridge maintenance and be unsafe.
- Bike/pedestrian access on San Mateo Bridge is limited due to the curtailment of SamTrans Transbay service, but institution of a new bicycle shuttle required by a BCDC permit should improve access.
- Dumbarton Bridge currently gets about 85-100 users during the weekdays and about half that on weekends. Costs for new facilities are significant for the questionable amount of use.

Bicycle and Pedestrian Facilities

Project Title
East Bay Regional Trail Gap Segments

Project Description
Complete trail segments of four regional multi-use trails in the East Bay (Alameda and Contra Costa Counties): Iron Horse Trail, Shadow Cliffs to Del Valle Trail, Delta de Anza Trail, and San Francisco Bay to San Joaquin River Trail.

- *Iron Horse Trail*
  - San Joaquin County to Shadow Cliffs (Greenville Rd. to First Ave.)
  - Shadow Cliffs to Alameda County (Shadow Cliffs to Santa Rita Rd. and Sant Rd. to BART Station)
  - Walnut Creek Channel Extension (Hwy. 4 to Waterfront Rd.)
- *Shadow Cliffs to Del Valle Trail*
- *Delta de Anza Trail*
  - Hillcrest/Wildhorse (Antioch) to Neroly Rd. (Oakley)
  - Evora Rd. to Iron Horse Trail/Walnut Creek Extension
- *San Francisco Bay to San Joaquin River Trail*
  - Niles Canyon to Shadow Cliffs (Shadow Cliffs to downtown Pleasanton)

Project Background
- Included in the East Bay Regional Park District 1997 Master Plan.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $8.05 million (1999$)
Total Annual Operating Cost: $313,500 (1999$) (20.9 miles - estimated maintenance cost of $15,000/mile/year)
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- East Bay Regional Park District provides over 1,000 miles of trails, including regional trails that connect parklands and provide access to local communities.
- The District has found that in recent years the demand for trails close to home has increased dramatically, and trail use has been on the rise for everything from basic transportation to outdoor exercise.
- Regional trails provide non-motorized, multiple-use, pedestrian, equestrian, and bicycling connections between parks, thus encouraging alternative modes of transportation and helping to reduce pollution.
- Regional trails also connect regional parks and trails to important destinations such as transit centers, schools and colleges, civic centers, large commercial complexes, or residential areas.

Bicycle and Pedestrian Facilities

Project Title
Local Bicycle and Pedestrian Facilities - Regionwide

Project Description
Construct local bicycle and pedestrian facilities beyond those identified in the 1998 Regional Transportation Plan.

Some priority bicycle and pedestrian facilities that have been identified are provided below.

I-680 North Corridor:
Although significant facilities have been completed (e.g., St. Stephen's bicycle and pedestrian path in Orinda), several gaps remain. Gap closure projects paralleling SR 24 in Lafayette, Orinda and Contra Costa County could include a designated bikeway from Fish Ranch Rd. to Walnut Creek.

State Route 4 Corridor:
The State Route 4 Cycle 1 Corridor Management Plan identified the following priority bicycle and pedestrian facilities.

- Complete the Martinez Shoreline to Pt. Edith gap closure which would connect the Iron Horse Trail to the Benicia-Martinez Bridge. ($200,000)
- Complete the Marsh Creek Trail gap closure which would connect Delta Road to Knightsen ($200,000)
- Complete the Sobrante Ridge to Carquinez Strait Trail which would connect Franklin Canyon undercrossing for regional trail access ($300,000)
- Construct bikeway parallel to SR 4 west ($200,000)

Napa Valley Subarea Corridor:
Priority projects from the Napa Countywide Bicycle Plan (1999) that are anticipated to be achievable within a ten-year horizon are integrated into the Draft Napa County Transportation Planning Agency Strategic Plan (1999). The total cost for these priority projects is $13 million (in 1999$), and an excerpt is provided as follows.

Class 2 and 3 Bikeways on State Highways
- SR 121/221: Napa-Vallejo Highway: widen for bike lanes from SR 29 to Soscol Street
- Silverado Trail from Soscol to Trancas—widening for bike lanes
- City of Calistoga—SR 29/Lincoln Ave. Widen for Class 2 bike lanes
- SR 29—improvements to allow bike access between SR 221 and Imola Avenue
- SR 128—Tubbs to Sonoma County: widen shoulder
- Rutherford: SR 128—Rutherford Crossroad—widen for Class 2 Bike Lanes

Project Background
N/A

Proposed Operating Scenario
N/A

Estimated Costs:
Capital: TBD
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
The development of a "seamless" network of local bicycle and pedestrian facilities would improve connectivity of City downtowns as well as access to transit and major activity centers. It would also make bicycling and walking a more viable travel option.

Rail Road Right-of-Way Preservation

Project Title
Railroad Right-of-Way Preservation

Project Description
Acquire railroad rights-of-way for future regional transit improvements

Project Background
- Bay Area railroad rights-of-way have been purchased to preserve mass transit options; examples include Northwestern Pacific in Sonoma/Marin/Napa Counties, Dumbarton Rail Bridge in Alameda/San Mateo Counties. The old SP San Ramon Branch line in Contra Costa County was initially purchased for a future "commuterway", but has since become a significant recreational trail - Iron Horse Trail.
- Intercity and/or commuter rail service operates on privately owned railroad rights-of-way; several of these services operate jointly with existing privately operated freight service.

Proposed Operating Scenario
There are several new or expanded rail services described in this Blueprint Project Notebook that will require new/additional rights-of-way or operating easements. These include:

- UP Line between San Jose and Hollister (Caltrain - see Santa Clara Subarea)
- UP Niles-San Jose Branch Line (Commuter Rail/BART - see Fremont-South Bay Corridor)
- Old SP Niles-San Jose Branch Line (Commuter Rail/BART - see Fremont-South Bay Corridor)
- UP-Auburn, Sacramento, Oakland, San Jose (Capitols Service - see I-80 Corridor)
- UP Tracy/Altamont Branch Line (ACE Service - See I-580 Corridor)

Estimated Costs
Capital: TBD
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Right-of-way purchase would preserve future rail operating rights
- Expansion of some existing rail service may not possible without right-of-way or easement purchase
- Some rail rights-of-way may not be available in the future if sold off or existing freight service is intensified
- AB 74 (Strom-Martin) requires Caltrans to conduct a 10-year assessment of existing and proposed passenger rail services.

Transportation for Livable Communities

Project Title
Transportation for Livable Communities Program (TLC)

Project Description
Provide planning and capital assistance for projects that strengthen the link between transportation, community goals and land use.

Project Background
- The MTC Commission adopted the Transportation/Land Use Connection Policy Statement in 1996 to promote the development / redevelopment of livable communities in the Bay Area.
- With the assistance of the MTC Advisory Council, MTC established the TLC program in 1997.
- The TLC Program has two components: (1) community planning and technical assistance support and (2) capital grants for project implementation. Project examples include pedestrian- and transit-friendly developments and streetscape improvements.
- TLC projects are developed in partnership with transportation providers and local communities, and involve extensive public outreach and participation. Eligible project sponsors are transportation agencies, local jurisdictions and community organizations.

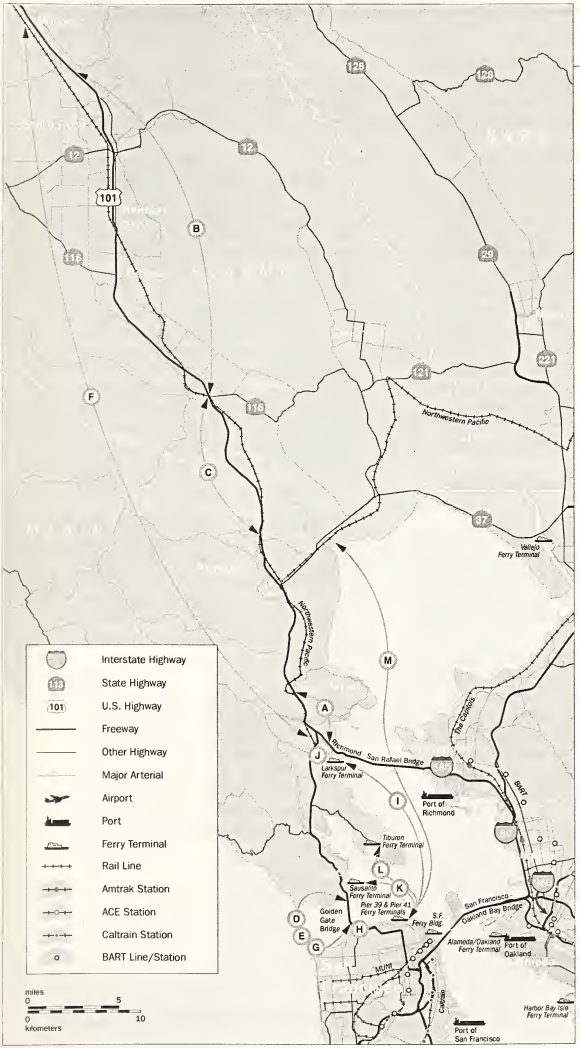
Proposed Operating Scenario
N/A

Estimated Costs
Capital:
Funds for Capital Program: $20 million per year for 20 years
Funds for Planning Program: $1 million per year for 20 years

Observations/Issues
- The TLC program provides an opportunity to link transportation investment to neighborhood revitalization and community development. The program also recognizes and encourages new partnerships being developed between public agencies and community representatives to develop TLC projects.
- The last cycle of both the TLC Planning and Capital Programs was extremely competitive. Under the Planning Program, MTC received 41 applications totaling $1.6 million in requests; however, $375,000 was available for programming for the FY 1999-2000. Similarly, under the Capital Program, MTC received 88 project applications totaling about $82 million in requests. For this cycle, $9 million was available in federal funds through the Surface Transportation and Transportation Enhancements Programs for FY 1998-99.
- As of August 1999, 33 projects have received TLC funding at a total of approximately $10.1 million ($9.4 million in capital funds and $730,000 in planning funds).
- As we enter into the next cycle of the TLC Capital Program, MTC anticipates that the TLC Program will continue to be competitive as local governments, community-based organizations and transportation service providers seek funding to bring new vibrancy to downtown areas, commercial cores and urban/rural neighborhoods and enhance the quality and livability of their communities.

Section B

Golden Gate Corridor



Golden Gate Corridor

- (A) Complete the US 101 Ultimate Gap Closure Project (4.3 miles from North San Pedro Road to Lucky Drive)
- (B) New HOV Lanes and Interchange Improvements on US 101 in Sonoma Co.
- (C) New HOV Lane(s) on US 101—Atherton to SR 116 East
- (D) Golden Gate Bridge Moveable Median Barrier
- (E) Golden Gate Bridge Toll Plaza Bus Stop Relocation
- (F) Commuter Rail Service from Cloverdale/ Healdsburg to San Rafael/ Larkspur
- (G) Golden Gate Bridge Under-Deck Rehabilitation
- (H) Golden Gate Bridge Maintenance Facility Relocation
- (I) Improvements to Ferry Service (Larkspur to S.F.)
- (J) Golden Gate Ferry Larkspur Terminal Facility Expansion
- (K) Improvements to Ferry Service (Sausalito to S.F.)
- (L) Expanded Ferry Service (Tiburon to San Francisco)
- (M) New Ferry Service (Port Sonoma to San Francisco)

Not Mapped:

- Construct New and Expand Existing Park-and-Ride Lots along US 101
- Expansion of Express and Intercity Bus Service on US 101
- Improved Access to National Park Sites in Marin County

Project Title
Complete the US 101 Ultimate Gap Closure Project (4.3 miles from Lucky Drive to North San Pedro Road)

Project Description
The project is divided into 4 segments:

Lucky Drive to Anderson Drive
- Add northbound HOV lane
- Add southbound auxiliary lane between Anderson Drive and Sir Francis Drake

Anderson Drive to Mission Avenue
- Add northbound HOV lane
- Replace existing northbound viaduct
- Widen on-ramp from westbound I-580 to northbound US101 to two lanes
- Add a direct connector ramp from northbound US 101 to eastbound I-580
- Add northbound auxiliary lane between the US 101/I-580 interchange and Second Street

Mission Avenue to North San Pedro Road
- Add northbound HOV lane
- Reconstruct Linden Lane undercrossing
- Add southbound auxiliary lane between Lincoln and Mission
- Widen existing northbound Mission Avenue on-ramp to two lanes

On I-580
- Add new interchange east of Irene St.
- Relocate westbound on/off-ramps and eastbound on-ramp at Bellam Blvd. to new interchange near Irene St.
- Connect new Irene St. interchange to Anderson Drive and Kerner Blvd.
- Add eastbound auxiliary lane between US 101 interchange and new Irene St. interchange

Project Background
- The current interchange provides direct ramps only from I-580 west to US 101 north and from US 101 south to I-580 east.
- Caltrans completed a PSR for the Ultimate Gap Closure in 1987.
- The 1998 STIP provided funding for a southbound HOV lane and southbound auxiliary lane through San Rafael. The RTP assumes $82.8 million (year 2011) to convert the southbound HOV lane to a reversible HOV lane.
- In 1999, Caltrans will complete the EIR/EIS for the northbound HOV lanes. This study will include the unfunded improvements to the existing connector from I-580 west to US 101 north.
- The new connector from northbound US 101 to eastbound I-580 has not been studied further.

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1999$): $91 million, for 4 segments
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Providing direct connection between the southern segment of US 101 and I-580 would relieve congestion on Sir Francis Drake and improve access to the Larkspur Ferry Terminal.
- A relatively small share of traffic on the southern segment of US 101 connects with I-580.

Project Title
New HOV Lanes and Interchange Improvements on US 101 in Sonoma County

Project Description
Provide two continuous HOV lanes in the freeway median from River Road (in Windsor) to SR 116 East (in Petaluma). Upgrade several interchanges and provide new interchanges at selected locations. For detail, see table under project cost.

Project Background

- The 1998 Regional Transportation Plan (RTP) shows funding is committed for some project segments; funding was provided for others in Track 1. The Blueprint would accelerate the delivery of these segments. For detail, see table under project cost.
- Project included in the preferred alternative of the 1997 Sonoma/ Marin Multi-modal Transportation and Land Use Study (Calthorpe Study) and the Sonoma County Measure B expenditure plan. In 1998, the voters failed to authorize a sales tax increase to fund the expenditure plan.

Proposed Operating Scenario
N/A

Estimated Costs
Capital Cost (See table below.)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues

- Continuity of HOV necessary to support carpooling and express bus service.

Capital Costs for US 101 Improvements (1998$)

Measure B Cost Estimates	($Mill)	RTP Status
Windsor River Blvd. – River Rd.	33	
River Rd. – Steele Lane	31	Track 1
River Rd./ Mark W. Springs	7	
Steele Lane – Wilfred Ave. (1)	85	Committed (IIP, 1998 STIP)
Steele Lane I/C	12	Track 1
Hearn Ave. I/C	18	
Bellevue Ave. I/C	14	
Todd Rd I/C	31	
Wilfred Ave. – Hwy. 116 W.	20	
Wilfred Ave. I/C	28	
Hwy. 116 W -- Old Redwood Hwy. (2)	75	Track 1
Old Redwood Hwy – Hwy 116 E	49	
Old Redwood Hwy I/C	22	
New Petaluma Interchange	27	
East Washington Ave. I/C	27	
Subtotal Sonoma County Meas. B	479	
Less committed and Track 1 (3)	(203)	
Remainder	276	

Notes:
(1) Includes College Ave. & Hwy. 12 interchanges
(2) Includes Hwy. 116 W. interchange
(3) Assumes elements included in RTP Track 1 or Baseline (committed) are fully funded.

Project Title
HOV Lane(s) on US 101 – Atherton in Novato to SR 116 East in Petaluma

Project Description
A range of upgrade options exist (from least to most costly):

1) Reversible HOV lane in the median of US 101, using primarily existing ROW. Possible alternatives include median widening only, median widening with minimal grade separation at critical intersections, and upgrade to full freeway standards.
2) Two HOV Lanes at reduced freeway standards, converting the segment to a six lane freeway with one HOV lane in each direction.
3) Two HOV Lanes through Novato Narrows on US 101, built to full freeway standards, converting the freeway to six lanes with one HOV lane in each direction. Freeway would be built to full freeway standards with two or three interchanges, depending on the alternative selected.

Project Background
- Track 1 of the 1998 Regional Transportation Plan (RTP) funds two HOV lanes on this segment ($249 million total in 2011), assuming partial funding from the IIP. The Blueprint would accelerate the delivery of this project.
- The existing segment is a four-lane expressway with several at grade intersections and driveways.
- Upgrade to full freeway status first proposed in 1985; previous corridor studies, including Calthorpe study, have considered the addition of two HOV lanes. Ultimately, the project was not included in the preferred alternative. The Caltrans PSR, completed January 1999, assumes two HOV lanes at full freeway standards.
- The Sonoma County Measure B expenditure plan included $89 million for two HOV lanes. Marin County did not include the project in their Measure A ballot measures. The Sonoma County voters approved the expenditure plan but did not authorize the sales tax increase to fund the expenditure plan.

Proposed Operating Scenario
A reversible HOV lane would operate in the southbound direction in the AM peak period and in the northbound direction in the PM peak. The two HOV lane alternatives would be operated in the standard fashion.

Estimated Costs
Capital:
- $124.3 million for reversible*
- $124.3 million for two lanes, reduced standards**
- $216.2 million for two lanes, full standards

Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

* Source: Calthorpe/DKS
**Source: Sonoma/ Marin Multi-modal Transportation and Land Use Study, Report 3, Preferred Alt.

Observations/Issues
- There is concern about the impact of a new facility on growth in both counties.
- Sonoma County has implemented a land use freeze in this section of US 101.
- MTC is currently studying the feasibility of tolling new lanes south of the Petaluma Bridge to finance/accelerate their construction.
- Sanitary Landfill Road intersection is a major safety concern.
- Building short of full freeway standards would reduce structure footprint and likely reduce wetlands impacts as well as cost.

Project Title
Golden Gate Bridge Moveable Median Barrier

Project Description
Install a moveable median barrier system to replace the current "cone" lane delineation that must be adjusted manually to change lane configurations on the six lane Golden Gate Bridge roadway.

Project Background
The Golden Gate Bridge has a 62' wide roadway with six lanes for traffic in both directions. The bridge toll plaza has 11 toll lanes and one outside lane. The 6 bridge lanes and 12 toll plaza lanes are reconfigured 4 times each day to accommodate directional traffic volumes. Peak weekday morning and evening directional traffic volumes require 4 lanes with 2 lanes provided to the reverse commute. Midday and weekend traffic require 3 lanes in each direction. Low volume, late night traffic requires 2 lanes in each direction allowing for 2 lanes to be closed as a safety "buffer". There is no median barrier on the bridge due to its limited width. Though infrequent, head-on collisions occur resulting in severe injuries and sometimes fatalities

Over the past decade, District has been searching for new moveable median barrier technology that can fit into the limited width roadway and allow for lane changes while providing for a safety barrier to prevent head-on collisions. District contracted with Barrier Systems, Inc. (BSI) to develop and test a new moveable barrier for use on the bridge recognizing that lane widths on the bridge would have to be reduced to accommodate the width of the barrier. The Board authorized conceptual approval for the installation of (BSI) 1-foot-wide Quickchange Movable Median Barrier in 1998. Preliminary engineering work is ready to begin.

Proposed Operating Scenario
The barrier would be moved by a special vehicle that would operate in accordance with the current lane reconfiguration schedule. The project includes establishing areas on both ends of the bridge for vehicle storage.

Estimated Costs
Capital (1999$): $8 million
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Barrier will reduce the number of severe injuries and fatalities on the bridge.

Project Title
Golden Gate Bridge Toll Plaza Bus Stop Relocation

Project Description
Reconstruct the southern approach of the bridge toll plaza to accommodate longer GGT bus dwell times; longer dwell times will support timed-transfers between GGT (and MUNI) buses.

Project Background
- Included in the 1997 SRTP for Golden Gate Transit but dropped from 1999 plan due to insufficient funding and need for coordination with planning for Doyle Drive project.
- Existing GGT bus stops are constrained by roadway geometrics and proximity to toll plaza. Buses cannot dwell at the stops to make transfer connections without interfering with toll plaza operations.
- Conceptual plans were prepared in a 1982 Toll Plaza Master Plan Study to relocate the GGT bus stops but the project did not move forward due to lack of funds. Relocation of the northbound bus stop was proposed as an STP/CMAQ project in 1997 as part of a plan to widen and repave the toll plaza. This project also failed to receive funds and District proceeded with paving separately. Toll plaza widening has been deferred pending the implementation of ETC.

Proposed Operating Scenario
The project would support and improve existing transfers between GGT buses and MUNI buses. Transfers provide extended coverage of San Francisco and avoid additional cost of operating direct GGT services beyond the downtown area.

Estimated Costs
Capital (1999$): $5 million
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
GGB Toll Plaza bus stops are recognized as a Regional Transit Transfer Point. Improved transfer coordination at this location was recommended in 1988 MTC Regional Transit Coordination Plan.

Project Title
Commuter Rail Service from Cloverdale/ Healdsburg to San Rafael/ Larkspur

Project Description
Several service options exist – from least to most costly:

1) Limited service Healdsburg – Downtown San Rafael (12 stations, 50 miles)
2) Limited service to Healdsburg – Larkspur Ferry Terminal (13 stations, 53 miles). Extending the service to Larkspur requires reconstruction of the tunnel under Calpark Hill, a new overhead structure to the Ferry terminal and a grade separation at Anderson Drive.
3) Upgraded service to Healdsburg – Larkspur Ferry Terminal – (13 stations, 53 miles. See Alt. 2.)
4) Full build out – Service from Cloverdale to San Rafael/ Larkspur (15/ 16 stations, 67/ 70 miles)

All alternatives would implement passenger rail service on existing ROW and include repairing track, constructing stations and parking, and purchasing rolling stock. Feeder bus service is also included.

Project Background
- This project is included in Track 2 of the 1998 RTP.
- Existing Northwest Pacific ROW runs parallel to US 101 through Marin and Sonoma counties and into Mendocino. In 1998, heavy rains damaged the usable track in Mendocino, Sonoma, and Marin counties, restricting already limited freight service. Significant repairs and upgrades would be required to run passenger service.
- 1989 Corridor Study recommended capital improvements to implement commuter rail in Sonoma County and light rail in Marin County.
- A consortium of local agencies purchased the ROW in 1995. Sonoma/ Marin Area Rail Transit (SMART) Commission, was established to develop operating and funding strategies for the corridor.
- The Sonoma/ Marin Multi-modal Transportation and Land Use Study considered full build-out scenarios for service between Healdsburg and the Larkspur Ferry Terminal. A start up rail service based on the preferred alternative was included in Measure B in 1998. Though the expenditure measures passed, the finance measure failed.
- In 1998 SMART initiated a study focused on start-up service with the goal of including the project in the next sales tax/ expenditure measures to go on the ballot. The study will refine the project definition and associated cost estimates for a start-up service.

Proposed Operating Scenario
Rail Alternatives
1) Limited Service Healdsburg - San Rafael – 36 trains per day (30 minute headways)
2) Limited Service Healdsburg - Larkspur – 36 trains per day (30 minute headways)
3) Upgraded Service Healdsburg - Larkspur – (15 minute headways)
4) Full build out Cloverdale – Larkspur/ San Rafael – (15 minute headways)

Feeder Bus and Shuttles – Frequencies would be upgraded on existing routes operated by GGT, Sonoma County Transit, Santa Rosa City Bus, and Petaluma Transit. Shuttle service would be added.

Continued on next page.

Estimated Costs
Rail only

1) Limited Service Healdsburg - San Rafael (5-day service; capital costs in 1996$; operating costs in 1999$)*
   Capital: $93 million
   Total Annual Operating Costs: $5.2 mill.
   Farebox Recovery Assumed: 30 - 50%
   Net Annual Operating Costs: $2.6 - $3.6 million

2) Limited Service Healdsburg - Larkspur – 36 trains per day (5-day service; capital costs in 1996$; operating costs in 1999$)*
   Capital: $101 million
   Total Annual Operating Cost: $5.4 mill.
   Farebox Recovery Assumed: 30 - 50%
   Net Annual Operating Cost: $2.7 - $3.8 million

3) Upgraded Service Healdsburg - Larkspur (1999$)
   Capital: $101 million
   Total Annual Operating Cost: $10.4 million
   Farebox Recovery Assumed: 30 - 50%
   Net Annual Operating Cost: $5.2 - 7.3 million

4) Full build out Cloverdale – Larkspur/ San Rafael (1999$)
   Capital: $131 million
   Total Annual Operating Cost: $12.5 million
   Farebox Recovery Assumed: 30 - 50%
   Net Annual Operating Cost: $6.3 - $8.8 million

Feeder Bus (1999$)
Capital: $11.62 million
Total Annual Operating Cost: $3.7 million
Farebox Recovery Assumed: 20%
Net Annual Operating Cost: $2.9 million

* Costs and Farebox ratio are based on full build-out scenarios in the Calthorpe study. The costs of start up scenarios (2002) are currently being studied and may differ significantly.

Observations/Issues

- There is interest in keeping the ROW open and accessible for freight operations, viewed as important to the north coast economy. There is additional interest in running excursion trains to accommodate tourists.
- The North/South Bikeway Feasibility Study recommended that a portion of the ROW be converted to a class 1 bikeway.
- Environmental concerns include wetlands impact, noise impacts, and development impacts on existing communities. Grade crossings are a safety concern.
- The Larkspur extension would facilitate transfers between rail and ferry, for trips to San Francisco. The capital costs to extend the track from downtown San Rafael to the Larkspur Ferry Terminal make this an extremely expensive extension on a per mile basis. The extensive work required on this section suggests it might be pursued in a second phase.
- Existing ROW parallel to SR 37 might allow rail service to connect with future ferry service at Port Sonoma.

Project Title
Golden Gate Bridge Under-deck Rehabilitation

Project Description
Project includes re-painting the under-deck of the bridge to remove existing corrosion and protect it from future corrosion.

Project Background
An inspection of the bridge under-deck was conducted in 1998. The inspection revealed serious corrosion of painted steel components. A program of corrosion removal and component rehab and repainting using improved non-corrosive materials was recommended.

Proposed Operating Scenario
Repairs would be undertaken over a period of three years beginning 2006 and after completion of seismic retrofit. Stop-gap, temporary remedial repairs will be done in 2000.

Estimated Costs
Capital: $22 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
This is a critical bridge maintenance project

Project Title
Golden Gate Bridge Maintenance Facility Relocation

Project Description
Relocate the bridge maintenance facility and other buildings with functions not essential to operation of bridge toll plaza from their current location adjacent to Toll Plaza to an undetermined site in the Presidio.

Project Background
The 1993 Presidio General Management Plan of National Park Service/Golden Gate Recreational Area calls for restoration of the current facility site for recreational use, necessitating the relocation of the existing non-essential operating and administration facilities.

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1999$): $25 million
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
Relocation is desired by GGNRA to permit recreation use and restore the natural habitat.

Project Title
Improvements to Ferry Service from Larkspur to San Francisco

Project Description
Advance purchase of a third high-speed vessel, replace one set of hydraulic boarding ramps, and upgrade the equipment and facility at the terminal. Landside access improvements include signalization of the intersection of East Sir Francis Drake Blvd. and Andersen Dr., geometric improvements to the intersections near the terminal entrance/exit drive, coordination of transit signals along East Sir Francis Drake, a bicycle bridge over Corte Madera Creek, and a variable message sign on US 101. A more expensive project would advance the replacement of both the third and fourth vessels.

Project Background
- The project is recommended in the MTC Ferry Plan Update (1999). The more aggressive ferry replacement is included in the Bay Area Council's High Speed Water Transit System Plan (1999)
- Golden Gate Transit currently provides this service and would be the sponsor.
- In 1998 Golden Gate Transit introduced a high speed vessel (1 of 4 total) for the Larkspur route. A second high-speed vessel will be purchased in FY 1999-2000 and one of the Larkspur vessels will be shifted to replace a slower vessel on the Sausalito route. This will also allow interlining of midday service to provide hourly service from Larkspur and Sausalito. The third and fourth vessels are currently scheduled for upgrades in 2005-07.
- Some recommendations in the 1995 Larkspur Terminal Access Study, parking and transit access, have been implemented. Others, such as refining the ferry schedule and restructuring feeder bus, are expected to be implemented with the replacement of the fourth vessel.

Proposed Operating Scenario
The MTC project would maintain current headways (25 minutes in the peak, 60 minutes in the off-peak) but allow operation with three vessels. The high-speed vessels make the 11 mile trip in 30-32 minutes.

The Bay Area Council (BAC) project would keep all four ferries and increase service frequency to 15 minute headways in the peak period.

Estimated Costs
Replace 1 vessel:
- Capital (1998$): $20,000,000
- Total Annual Operating Cost: $9.6 million (1999$)
- Farebox Recovery Assumed: 30%
- Net Annual Operating Cost: $6.7 million (1999$)

Replace 2 vessels:
- Capital (1998$): $23, - $28 million
- Total Annual Operating Cost: $10.9 million (1999$)
- Farebox Recovery Assumed: 68%
- Net Annual Operating Cost: $3.5 million

Observations/Issues
- Landside access remains constrained. The 1995 Larkspur Terminal Access Study looked at parking expansion and found it may be viable but would attract additional traffic through already congested intersections.
- Project would potentially increase demand through more frequent service.
- More high-speed trips are expected to boost ridership, as occurred previously.
- Financing for rail service on the existing Northwest Pacific ROW was rejected by Marin and Sonoma county voters in 1998. However, if financing were approved in the future, rail service might be extended to serve the exiting Larkspur ferry terminal, though at great expense.

Project Title
Golden Gate Ferry Larkspur Terminal Facility Expansion

Project Description
Expand customer parking and expand operating, maintenance and administration facilities located at the Larkspur ferry terminal to support projected demand for larkspur ferry service.

Project Background
- A 1996 terminal access study recommended a phased program of capital and operating improvements to meet projected demand for Larkspur to San Francisco ferry services.
- Short term, interim facility and service enhancements are Included in the 1999 SRTP for Golden Gate Transit.
- This project would build a $20 million, 1,500 space, semi-depressed parking structure option recommended in the long range improvement program and expand the existing maintenance facility and add a fifth berth for $5 million as recommended by the ferry division to support expanded ferry services.

Proposed Operating Scenario
This project would support four, high speed ferries running between Larkspur and San Francisco ferry service and also provide for overnight storage of the Sausalito ferry vessel.

Estimated Costs
Capital (1999$): $25 million
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Landside access is constrained. The 1996 Larkspur Terminal Access Study looked at parking expansion and found it may be viable but would attract additional traffic through already congested intersections. However, the alternative to building a parking structure is to triple the use of feeder buses and reduce parking demand. While the District is planning feeder bus improvements and expects to increase bus to ferry riders, in the long term feeder bus service will need to be supplemented with additional parking to avoid constraining ferry use. Proposed construction of a new US 101/I-580 interchange ("Ultimate gap closure") would remove through traffic from these intersections and alleviate traffic congestion at the ferry terminal.
- More high-speed ferry trips are expected to boost ridership.
- Financing for rail service on the existing Northwest Pacific ROW was rejected by Marin and Sonoma county voters in 1998. However, if financing were approved in the future, rail service might be extended to serve the exiting Larkspur ferry terminal, though at great expense.

Project Title
Improvements to Ferry Service from Sausalito to San Francisco

Project Description
Improvements include a shelter for the waiting area and gangway and improvements to accommodate kiss-and-ride and bus transfers for improved landside access. Changes in operating costs assume that two of the vessels currently operated on the Larkspur route are shifted to the Sausalito route, allowing faster and more frequent service.

A more expensive project would replace the two Sauaslito ferries with 25 knot vessels, faster than the two that would be retired from the Larkspur route.

Project Background
- The project is recommended in the MTC Ferry Plan Update (1999). The more expensive ferry replacement is included in the Bay Area Council's High Speed Water Transit System Plan (1999).
- Golden Gate Transit provides commute service and would be the sponsor.
- Current service includes 2 round trips in the peak hour with 30 minute travel time.

Proposed Operating Scenario
Under the MTC project, travel time will be reduced to 20-22 minutes, permitting 30 minute peak period headways, and 60 minute headways in the off-peak.

The more expensive replacement would reduce travel time to 15 minutes.

Estimated Costs
Capital improvements and replacement with Larkspur vessels:
- Capital (1998$): $1.2 million
- Total Annual Operating Cost: $58,000 (1999$)
- Farebox Recovery Assumed: 31%
- Net Annual Operating Cost: $40,000 (1999$)

More aggressive replacement:
- Capital (1998$): $7,000,000
- Total Annual Operating Cost: $1.6 mill (1999$)
- Farebox Recovery Assumed: 100%
- Net Annual Operating Cost: $0

Observations/Issues
- Blue and Gold Fleet operates off-peak service between Fisherman's Wharf, Tiburon, and Sausalito and would benefit from facility improvements.
- Landside contraints: Parking expansion at Sausalito is not considered feasible. Residents of Sausalito are concerned that a shelter might block views of the bay.
- The route already serves a large number of recreational trips. Future studies may consider running a shuttle from the Sausalito ferry terminal to provide alternative access to National Park Service facilities in southern Marin and a new ferry route to Fort Baker for recreational use.

Project Title
Expanded Ferry Service from Tiburon to San Francisco

Project Description
Replace the existing ferries with high-speed ferries (25 knots) and extend service from the Ferry Terminal to Mission Bay.

Project Background
- Included in the Bay Area Council's High Speed Water Transit System Plan (1999).

Proposed Operating Scenario
The high-speed ferries would run the route in 30 minutes, allowing 30 minute headways in the peak period and 60 minute headways in the off-peak.

Estimated Costs
Capital: $7,000,000 (1998$)
Total Annual Operating Cost: $3.2 mill. (1999$)
Farebox Recovery Assumed: 53%
Net Annual Operating Costs: $1.5 mill.(1999$)

Observations/Issues
- Landside access remains constrained.
- There is currently no capacity shortage. Project would potentially increase demand through more frequent service, as well as capacity.

Project Title
New Ferry Service: Port Sonoma to San Francisco

Project Description
Construct a ferry terminal and parking on the south side of the existing Port Sonoma Marina. Purchase one to two ferries and introduce peak period service between Port Sonoma and the San Francisco Ferry Building. The 22 mile route requires vessels capable of 33 to 35 knots to provide competitive travel times (45 to 47 minutes).

Project Background
- The project is included in the Bay Area Council's High Speed Water Transit System Plan (1999).
- Route originally proposed as a traffic mitigation measure for a planned residential development in Novato and included in the 1992 Ferry Plan. When the development fell through, planning for the project lapsed for lack of a sponsor.
- Service appears technically and financially feasible but is unlikely to proceed without an interested sponsor. With a low subsidy per passenger trip, route may be a candidate for public-private partnership. Alternatively, if funds became available, route could be operated by GGBHTD, whose service jurisdiction includes Port Sonoma. However, GGBHTD currently has no plans to initiate service on this route.

Proposed Operating Scenario
1) Single vessel operating two trips in the peak period
2) Two vessels operating three trips in the peak period

Estimated Costs
1) Single vessel, two trips
   Capital (1998$): $11.9 million
   Total Annual Operating Cost (1998$): 918,000
   Farebox Recovery Assumed: 83%
   Net annual operating costs: $156,000
2) Two vessels, three trips
   Capital (1998$): $19.9 million
   Total Annual Operating Cost (1998$): $1.4 million
   Farebox Recovery Assumed: 71%
   Net Annual Operating Cost: $403,000

Observations/Issues
- Landside, waterside, and development impacts require more detailed analysis; environmental constraints may be prohibitive.
- Compatibility of land use has been identified as a serious issue for this terminal site as the surrounding area is agricultural and supports a large wildlife habitat
- Though the 1992 Ferry Plan questioned the adequacy of access roads to handle the ferry-related traffic, the 1998 Update suggests the capacity is adequate.
- Project currently lacks a sponsor.
- If voters were to approve funding for HOV lane extensions on 101 or rail service on the Northwest Pacific ROW, connections and improvements to the existing Larkspur ferry service might be a higher priority

Project Title
Construct New and Expand Existing Park and Ride Lots along US 101

Project Description
Several improvements have been explored to varying levels of detail:

- Expand existing lots adjacent to Highway 101 at San Quentin (50 new spaces) and Seminary Drive (12 new spaces).
- Construct a new lots adjacent to Highway 101 in Fairfax (bike racks and 31 new spaces) and in Novato at Nave Drive.
- Construct a new lot in Tiburon at Lyford Ave (not adjacent to Highway 101).

An additional new lot may be considered in Larkspur at Redwood Hwy. and Wornum.

Project Background

- The San Quentin, Seminary Drive, and Fairfax projects were submitted for STP/CMAQ funding in 1998, but currently remain unfunded.
- The other projects are in various states of development. Cost estimates have been provided where available.

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1998$ unless otherwise noted):

Expand lot at San Quentin	$150,000
Expand lot at Seminary Drive	$30,000
New lot in Fairfax	$40,000
New lot in Novato	$108,800
New lot in Tiburon	$193,700
TOTAL (5 lots)	$522,500.0 0

Total Annual Operating Costs: N/A

Farebox Recovery Assumed: N/A

Net Annual Operating Costs: N/A

Observations/Issues
There are demonstrated parking shortages at several of the sites.

Project Title
Expansion of Express and Intercity Bus Service on US 101

Project Description
Project includes vehicle purchase, route improvements, intermodal facilities, and purchase of shop and office equipment to upgrade existing express and intercity bus service operated by Golden Gate Transit and Sonoma County Transit

Project Background
- With a continuous network of HOV lanes, increased express bus could complement or be an alternative to rail in this corridor. The Sonoma/ Marin Multi-modal Transportation and Land Use Study (1997), also known as the Calthorpe study, defined an express bus alternative (Report 1, Alt. B), which was ultimately rejected in favor of the rail alternative. The sales tax expenditure plans in Marin and Sonoma Counties included the rail alternative.

Proposed Operating Scenario
Upgrade frequencies of existing routes. Potential improvements are described below for illustrative purposes. Buses on US 101 would run in continuous HOV lanes from Windsor to Corte Madera.

Routes	Peak Headway	Off-Peak Headway
GGBHTD Sonoma to Marin/ San Francisco		
Rtes. 71, 78, 90	30	60
Rte. 80	15	15
GGBHTD Marin to San Francisco/ East Bay		
Rte. 20	15	30
Rte. 30, 51	60, 60	
Rte. 40, 50	15	15
Rte. 70	30	30
GGBHTD Intra-Marin		
Rtes. 1, 21, 23	15	15
Sonoma County Transit		
30, 40, 44, 48, 60	30	60

Estimated Costs
Capital: $20.8 million (1999$)
Total Annual Operating Cost: $17.7 million (1999$)
Farebox Recovery Assumed: 32%
Net Annual Operating cost: $12.0 million

Observations/Issues
- Although the 1998 ballot funding measure did not pass, rail with feeder bus appears to have public support, which would limit the funding for a significantly upgraded corridor bus service.
- Project assumes continuous HOV lanes from Windsor to Corte Madera. See project description for HOV lanes on US 101.

Project Title
Improved Access to National Park Sites in Marin County

Project Description
Provide recreational transit service to Muir Woods and other National and State park sites in Southern Marin. The alternative studied to date is a free shuttle service from the Manzanita park and ride lot to Muir Woods between April and October. Existing parking at Muir Woods would be converted to paid parking.

Project Background
- The Golden Gate National Recreation Area recently completed the Muir Woods Transportation Study (1999) which considered alternatives to reduce traffic congestion and alleviate parking shortage, thereby improving access to the national park. This study recommended the project described here.
- Funding has been secured to expand the existing Manzanita park and ride lot to accommodate park visitors as well as commuters.
- A second phase will include a more detailed study of alternatives for improving access to Muir Woods and several nearby recreational park sites including Stinson Beach, Muir Beach, and Tennesse Valley. This may result in recommendations for different or expanded recreational transit services.

Proposed Operating Scenario
Details to be determined.

Estimated Costs
1) Manzanita – Muir Woods Shuttle:
   Capital (1999$): $1.7 million
   Total Annual Operating Costs: $1,190,000 (1999$)
   Farebox Recovery Assumed: N/A
   Net Annual Operating Cost: $10,000 surplus from parking revenues
2) Other recreational transit services:
   Capital (1999$): TBD in Phase 2
   Total Annual Operating Costs: TBD in Phase 2
   Farebox Recovery Assumed: N/A
   Net Annual Operating Cost: (less parking revenues): TBD in Phase 2

Observations/Issues
- Traffic congestion within the national park sites and on Rte. 1, the primary access road from US 101, are of major local concern.
- Project to improve access should address future growth in demand as well as current congestion.
- Service is predominantly recreational, with peak demands during the summer and on weekends; however, congestion on weekdays during the summer is also a concern.

Section C

North Bay East-West Corridor

North Bay East-West Corridor

- Interstate Highway
- State Highway
- U.S. Highway
- Freeway
- Other Highway
- Major Arterial
- Airport
- Port
- Ferry Terminal
- Rail Line
- Amtrak Station
- ACE Station
- Caltrain Station
- BART Line/Station

(A) Low-Scale TOS on State Routes 116, 121 and 29

(B) Park-and-Ride Lots (SR 116 near SR 121, SR 29 near SR 12/29, SR 121 at SR 29)

(C) Intersection Improvement—SR 12/29 at SR121

(D) Intersection Improvement—SR 12/29 at Airport Rd.

(E) Safety Improvements on SR 121

(F) Safety Improvements on Lakeville Hwy.—Shoulder Widening

(G) SR 12 Improvements between I-80 and Rio Vista Bridge

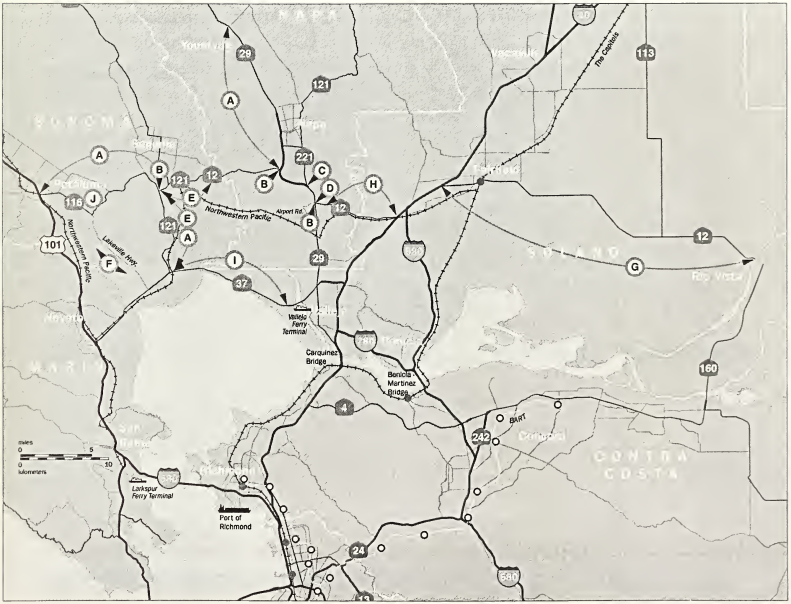
(H) Widen SR 12 from SR 29 to I-80

(I) SR 37 Widening with Environmental Improvements

(J) SR 116 Realignment between Sonoma and Petaluma

Not Mapped:

- New Express Bus Service from Fairfield to Napa via SR 12



Project Title
Low scale TOS on State Routes 116, 121, and 29

Project Description
Install low scale TOS elements, primarily highway advisory radio.

Project Background
- Included in Track 2 of the 1998 Regional Transportation Plan (RTP).
- The 1998 RTP included funding $1.4 million in 2011 for TOS on SR 37. Funding for TOS on SR 12/29 and SR 12 in Napa County was included in the 1999 TIP.
- Project included among a number of operational/ safety improvements recommended in North Bay Study Corridor Study (1998).

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1998$):

SR 116:	$0.1 to $0.2 million
SR 121:	$0.2 to $0.3 million
SR 29:	$0.1 to $0.2 million
TOTAL: (for all three)	$0.4 to $0.7 million

Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Weekend and event congestion can be severe. Recreational and commercial and agricultural vehicles are significant users. Low scale TOS would o provide better information to travelers, thereby easing congestion and facilitating incident management.

Project Title
Park and Ride Lots: SR 116 near SR 121, SR 29 near SR 12/29, SR 121 at SR 29

Project Description
Make the following park and ride improvements:
1) Construct a new lot at SR 116 near SR 121 (to replace an existing lot that will be eliminated in intersection improvements);
2) Construct a new lot at SR 29 up or downstream from SR 12/29;
3) Expand and formalize the existing park and ride lot off SR 121 at SR 29.

Project Background
- The 1998 Regional Transportation Plan (RTP) Track 1 included $2 million for a new park and ride lot on SR 37 on the east side of the Napa River Bridge, as recommended by corridor study.
- Included in the North Bay East West Corridor Study (1998).

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1998$):

1) New lot at SR 116 near SR 121	$2 to $4 million
2) New lot SR 29 near 12/29	$1 to $2 million
3) Expand existing lot off SR 121 at SR 29	$1 to $2 million
TOTAL (for all three):	$4 to $8 million

Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Possible wetlands impacts for the park and ride lot on SR 37 near the Napa River bridge.
- Park and Ride lots primarily oriented toward carpools.

Project Title
Intersection Improvement on SR 12/29 at SR 121

Project Description
Improve intersection of SR12/29/121, most likely through construction of the first phase of an eventual full interchange. A low cost alternative would make at grade improvements.

Project Background
- Included in Draft Strategic Transportation Plan (1999)
- The low cost alternative was one of several operational and safety projects recommended in North Bay Study Corridor Study (1998) to improve corridor safety and operations.
- Population and job growth have increased corridor travel demand.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $0.33 to $11 million
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This interchange serves as the western gateway into Napa County. It is also used as an alternate to SR 37.
- Capacity expansions would serve the commuter, truck, and tourist traffic. Level of service at this location is forecast to stay at F through 2020.
- Sensitive wetlands area; significant mitigations likely to be necessary.

Project Title
Intersection Improvement at SR 12/29 at Airport Road

Project Description
Improve intersection of SR 12/29/Airport Rd, possibly including a full interchange.

Project Background
- Included in Draft Strategic Transportation Plan (1999)
- A minimal, low cost improvement was one of the safety/ operational improvements recommended in the North Bay Corridor Study.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $2 to $15 million
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Capacity expansions would serve the commuter, truck, and tourist traffic. Level of service at this project location is forecast to stay at F through 2020.
- This project is the intersection of the two major access roads to Napa County.
- This intersection provides direct access to the Napa County Airport and one of three large industrial parks. It provides secondary access for the remaining two large industrial parks.

Project Title
Safety Improvements on SR 121

Project Description
Widen shoulders of SR 121, provide turn lanes east of Shellville, and make drainage improvements.

Project Background
- Track 1 of the 1998 RTP includes roughly $8 million in Year 2011 for a number of low-scale safety and operational improvements on SR 116 and 121 including shoulder widening at spot locations along SR 121. Additional low-scale improvements described here are included in RTP Track 2. The Blueprint would accelerate the delivery of this project.
- The North Bay Corridor Study (1998) recommended low-scale safety improvements on SR 121.

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1998$):

• Two-way left turn lane east of Schellville along SR 121	$4 to $5 million
• Drainage improvements at Schellville along SR 121	$1 to $2 million
• Continuous shoulder widening on 121	$7 to $10 million
TOTAL for all improvements:	$12 to $17 million

Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Shoulder widening on SR 121 will require wetlands mitigations.
- Recreational and commercial and agricultural vehicles are significant users.
- Safety is a major concern throughout the corridor; SR 121 east of SR 116 has a particularly high accident rate.
- The improvements will enhance safety and further improve conditions for recreational, commercial, and agricultural traffic.

Project Title
Safety Improvements on Lakeville Highway

Project Description
Widen Lakeville Highway to provide shoulders. The low end improvement would widen shoulders at critical spot locations. The high end improvement would add shoulders to the entire segment from SR 37 to Stage Gulch Road and provide a bike lane.

Project Background
- One of the safety/ operational improvements recommended in the North Bay Corridor Study (1998).

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1998$):

• Shoulder widening at spot locations along Lakeville Rd.	$2 to $3 million per mile
• Continuous shoulder widening on Lakeville Rd.	$13 to $20 million
TOTAL:	up to $13 to $20 million

Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Consistent with the overall corridor, concerns on this route include accommodating commercial, agricultural, and weekend tourist traffic while improving safety.
- Sensitive wetlands area, project specific mitigation possibly necessary.

Project Title
SR 12 Improvements between I-80 and Rio Vista Bridge

Project Description
Operational and safety improvements

Project Background
- Included in the 1998 Regional Transportation Plan Track 2.
- Hwy. 12 is a two lane road between Suisun City and Rio Vista (approximately 20 miles in length). The roadway has limited shoulders, passing lanes and turn pockets.
- Project was included in HR45 Report adopted by the legislature in 1994. $33 million has already been programmed in the 1998 STIP to improve vertical and horizontal curves and to extend passing lanes.
- An MIS type study will be conducted in FY 99-00 to determine the final scope of additional necessary work.
- CHP is currently conducting a Corridor Safety Project funded through the Office of Traffic Safety.

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1999$): TBD in the MIS
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- It is a major freight thoroughfare between I-80 and the Central Valley. Truck traffic composes over 10% of the average annual daily traffic

Project Title
Widen SR 12 from SR 29 to I-80 (Jameson Canyon)

Project Description
Widen SR 12 from SR 29 to I-80 (Jameson Canyon) to four lanes.

Project Background
- Included in the 1998 Regional Transportation Plan Track 1. The Blueprint would accelerate the delivery of this project.
- Included in the Draft Strategic Transportation Plan (1999).
- Included in the North Bay Corridor Study (1998).

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $35 million to $55 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Travel between Napa and Solano Counties is increasing and there are no viable alternatives to the highway.
- This project increases road and intersection capacities to accommodate future travel demand for commuter, visitor, and freight related trips.
- Level of service at this project location is forecast to decline from D in current year to F in 2020.
- This project serves as one of the two major access roads to Napa County. It makes a direct link to I-80.
- This project requires concomitant widening of the two-lane section in Solano County.

Project Title
SR 37 Widening with Environmental Improvements

Project Description
Widen SR 37 to a 4-lane highway (2 lanes in each direction) with intersection improvements. Project will raise the roadway with a drainage retention dike to prevent flooding. Project includes wetlands restoration and a new Bay Trail alignment. A much lower scale improvement would provide pullouts for trail access.

Project Background
- Recent safety improvements have included constructing a median barrier from the Napa River Bridge to Skaggs Island and removing passing lanes. The North Bay Corridor Study (1998) responded to a number of continuing operational problems.
- The Corridor study found traffic will exceed existing capacity by 2015; hence the recommendation to widen the highway.

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1998$): $0.2 to $0.4 million per access pullout (number to be determined); or $150 million for full widening and environmental improvements
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Project would necessarily include significant wetlands restoration as mitigation.
- Recreational and commercial and agricultural vehicles are significant users. Inadequate geometrics create safety hazards. Weekend and event congestion (Sears Point Raceway) can be severe.
- Widening is expected to make a significant contribution to maintaining acceptable travel time and level of service in the corridor over the long term.

Project Title
Realignment of SR 116: Sonoma to Petaluma

Project Description
Realign SR 116 (Stage Gulch Road) along Champlin Creek and widen the remaining segments.

Project Background
- Track 1 of the 1998 RTP includes roughly $8 million in Year 2011 for low scale safety improvements on SR 121 and this section of SR 116. The Blueprint would accelerate the delivery of these projects.
- The realignment was included in Sonoma County Measure B, the county sales tax measure for which the expenditure plan but not the finance measure was adopted by the voters in 1998.
- The North Bay Corridor Study (1998) recommended low-scale safety improvements (widening shoulders at spot locations and improving selected intersections) as an alternative to the expensive and high impact realignment project.

Proposed Operating Scenario
N/A

Estimated Costs
Capital (1998$): $27million
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Safety is a major concern on this route, which has narrow shoulders, tight curves, and a moderate grade.
- May require wetlands mitigations.
- Recreational and commercial and agricultural vehicles are significant users.
- The improvements will enhance safety and further improve conditions for recreational, commercial, and agricultural traffic.

Project Title
New Express Bus Service from Fairfield to Napa via Route 12

Project Description
Provide new express bus service from Fairfield to Napa via Route 12.

Project Background
N/A

Proposed Operating Scenario
Proposed new express bus service would be provided as follows:

Route	Peak Headway	Off-Peak Headway
Napa (New)	60 min.	60 min.
Napa (New)	60 min.	60 min.

Estimated Costs
Capital: $1.05 million (1999$)
Total Annual Operating Cost: $278,000 (1999$)
Farebox Recovery Assumed: 23%
Net Annual Operating Cost: $214,000 (1999$)

Observations/Issues
- There are no transit alternatives in this corridor to serve growing commute and recreational travel.
- New express bus service is intended to primarily serve commuters between Napa and Solano Counties.

Section D

Napa Valley Subarea

Napa Valley Subarea

(A) Channelization of SR 29—Sulpher Creek to Mee Lane

(B) Widening of SR 121/12 from SR 29 to Sonoma County Line

(C) Widening of SR 29 from SR 221 to SR 29/12/Airport Rd.

(D) Widening of American Canyon Rd. to 4 Lanes between I-80 and SR 29

(E) Extension of Flosden Rd. from American Canyon Rd. to Kelly. Realignment and Signalization of American Canyon Rd./Flosden Intersection

Not Mapped:

- Express Bus Service to BART Link/Vallejo Ferry

Interstate Highway
State Highway
U.S. Highway
Freeway
Other Highway
Major Arterial
Airport
Port
Ferry Terminal
Rail Line
Amtrak Station
ACE Station
Caltrain Station
BART Line/Station

Project Title
Channelization of SR 29, Sulphur Creek to Mee Lane

Project Description
Add eight foot shoulders and a nearly continuous left hand turn lane on SR 29 from Sulphur Creek to Mee Lane.

Project Background
- Included in Draft Strategic Transportation Plan (1999)
- Originally included in the 1985 STIP. Project was later phased. The current project is approximately one-half of the original.
- This project is to be programmed in the SHOPP when right-of-way negotiations with adjacent railroad reach a tentative accord.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $5 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Traffic conditions are to be relieved through the proposed operation and safety enhancements, no capacity enhancements are proposed.
- Many use this route to visit the wineries located along SR 29 and Silverado Trail. It is also used by commuters to the wineries and by trucks that serves the wineries.
- Businesses in the project area have contributed to the improvements through cooperative agreements.

Project Title
Widening of SR 121/12 from SR 29 to Sonoma Co. line

Project Description
Widen SR 121/12 from SR 29 to Sonoma Co. line to four lanes.

Project Background
- Included in the Draft Strategic Transportation Plan (1999)

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $7 to $15 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This project enhances road and intersection capacities to accommodate future travel demand for commuter, visitor, and freight related trips.
- Capacity expansions to serve the commuter, truck, and tourist traffic are needed. Level of service at this project location is forecast to decline from existing C to F in 2020.

Project Title
Widening of SR 29 from SR 221 to SR 29/12/Airport Rd

Project Description
Widen SR 29 by adding one lane from the SR 29/12/221 intersection to the SR 29/12/Airport Boulevard.

Project Background
- Included in the Draft Strategic Transportation Plan (1999).

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $5 to $10 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This project increases road and intersection capacities to accommodate future travel demand for commuter, visitor, and freight related trips.
- Capacity expansions to serve the commuter, truck, and tourist traffic are needed. Level of service at this project location is forecast to stay at F in 2020.
- This project serves as a key segment in the roadway network for Napa valley. It provides direct access to three major industrial areas, has no alternate routes less than 10 miles away, and all east-west or north-south traffic in the southern parts of the county pass over this segment.

Project Title
Widening of American Canyon Rd. to 4 lanes between I-80 and SR 29

Project Description
Widen American Canyon Rd. to 4 lanes between I-80 and SR 29.

Project Background
- Included in Draft Strategic Transportation Plan (1999)

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $15 million to $20 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This project would provide a reliever route between Napa and Solano Counties for Route 12.
- It increases road and intersection capacities to accommodate future travel demand for commuter, visitor, and freight related trips.
- Level of service at this project location is forecast to decline from D in current year to E in 2020.

Project Title
Extension of Flosden Rd. (4 lanes) from American Canyon Rd. to Kelly.
Realignment and signalization of American Canyon Rd./Flosden intersection.

Project Description
Extend Flosden Rd. (4 lanes) from American Canyon Rd. to Kelly. Realign and signalize American Canyon Rd./Flosden intersection.

Project Background
- Included in Draft Strategic Transportation Plan (1999)

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $17 to $22 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This project provides for a SR 29 alternate route from American Canyon Road to SR 221 where no alternates currently exist.
- Level of service at this project location is forecast to decline from B in current year to F in 2020.

Project Title
Increase Express Bus Service to BART Link/Vallejo Ferry

Project Description
Increase express bus service to BART Link/Vallejo Ferry from eight to fifteen round trips per day.

Project Background
- Included as Track 2 in 1998 Regional Transportation Plan.

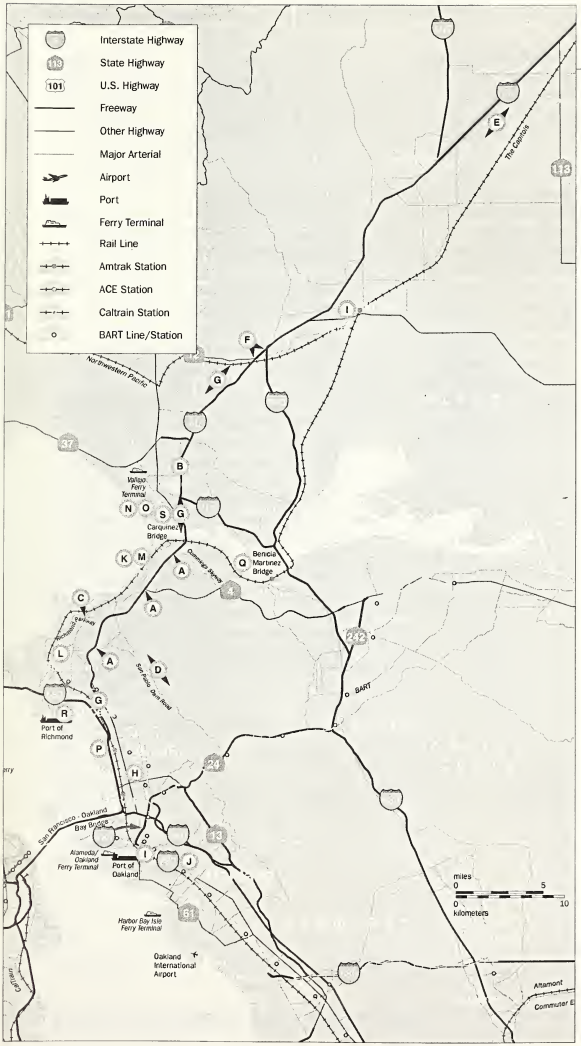
Proposed Operating Scenario
Service is to increase from eight to fifteen round trips per day.

Estimated Costs
Capital: $450,000 (one bus) (1999$)
Total Annual Operating Cost: $150,000 (1999$)
Farebox Recovery Assumed: 30%
Net Annual Operating Cost: $105,000

Observations/Issues
- This project provides improved regional transit connections. Express bus service will link to BART Link and Ferry Terminal in Vallejo via SR 29.
- The decreased headways will help NVT increase its thirty percent farebox recovery ratio—an already excellent figure for rural/suburban transit.

Section E

Interstate 80 Corridor



Interstate 80 Corridor

- (A) Interchange Improvements: I-80/Highway 4, I-80/San Pablo Dam Rd., I-80/Cummings Skyway
- (B) Interchange improvements and possibly HOV on I-80 between Carquinez Bridge and Highway 37
- (C) Richmond Parkway: Grade-Separated Interchange at San Pablo Avenue
- (D) San Pablo Dam Road Improvements
- (E) I-80 Widening between Vacaville and Dixon
- (F) I-80/I-680/SR12 Interchange Improvements
- (G) Express Bus on I-80 HOV Lanes from Carquinez Bridge
- (H) Enhanced Transit Service in San Pablo Ave./Telegraph Ave. Corridors
- (I) Peak Period Commuter Rail Capitol Corridor: Solano County to Oakland)
- (J) Capitol Corridor/West Oakland BART connection
- (K) Capitol Corridor/Rail Station in Hercules
- (L) BART Extension to Hilltop Mall or Pinole Vista/Pinole Shores
- (M) BART Extension to Hercules
- (N) Additional Vallejo Ferry Service
- (O) Intermodal Facilities for Vallejo Ferry Service
- (P) New Ferry Service from Berkeley/Albany
- (Q) New Ferry Service from Martinez/Benicia
- (R) New Ferry Service from Richmond
- (S) Light Rail on the Carquinez Replacement Bridge

Not Mapped:

- Solano County Bus Service
- West Contra Costa County Intercity Bus Service
- Improved Bus Service on San Pablo Dam Road

Project Title
I-80 Interchange Improvements (by interchange)
- I-80/SR-4
- I-80/San Pablo Dam Road
- Cummings Skyway
- Miscellaneous

Project Description
- Provide the missing direct connector from westbound I-80 to eastbound SR 4 in Hercules.
- Widen Cummings Skyway overcrossing to provide turn lanes and bike lanes.
- Provide improvements on interchanges of I-80/San Pablo Dam Road and other miscellaneous locations along I-80.

Project Background
- The 1998 Regional Transportation Plan (RTP) Track 1 includes the upgrade of Route 4 West (Cummings Skyway to I-80) to full freeway standards.
- Caltrans prepared schematics of the revised I-80/SR 4 interchange in 1986, nothing prepared since that date. Cost estimate shown below is very rough.
- The need for this Cummings Skyway interchange project was identified as part of County General Plan policies to remove truck traffic from Rodeo and Crockett. Related projects include EB truck climbing lane on Cummings Skyway, east of I-80.

Proposed Operating Scenario
N/A

Estimated Costs
Capital:$125 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The ongoing SR 4 freeway gap project will widen the westernmost portion of SR 4 to freeway standards, but does not change the geometry of the interchange itself.
- At present the I-80/SR 4 connection is made via surface streets by exiting at Willow Avenue, and rejoining SR 4 at Willow/Sycamore, or by using Cummings Skyway.
- Cummings Skyway interchange improvement will shift truck movements to the Rodeo/Crockett industrial area that is now served by the recent extension of Cummings Skyway to San Pablo Avenue.
- I-80/SR 4 and other miscellaneous interchange improvements will improve service and operation along the SR 4 corridor.

Project Title
Interchange Improvements and possibly HOV Lanes along I-80 between the Carquinez Bridge and Highway 37 (through Vallejo)

Project Description
Project scope to be determined after the preparation of a PSR level study to address the need for interchange improvements and possibly HOV lanes on I-80 between the Carquinez Bridge and Highway 37 (through Vallejo).

Project Background
- The I-80 interchange improvements in Solano County project is included in the 1998 Regional Transportation Plan (RTP) Track 2.
- According to the I-80 Corridor Study, I-80 between the Carquinez Bridge and Highway 37 is predicted to be one of the most congested segments of I-80. This segment of I-80 is characterized by a relatively narrow right of way, closely spaced interchanges and inadequate weave merge lanes. In addition most of the ramps do not meet current standards and terminate on local residential streets rather than on major arterials as they should. It should also be noted that the I-80/I-780 Interchange does not meet current Caltrans standards. These conditions contribute to the current and future congestion along this segment of I-80.
- The review of the addition of HOV lanes on this segment of I-80 should also be reviewed concurrently with the many interchanges that need review.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: TBD
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Interchange improvements and possibly HOV lanes could improve the operations and traffic flow along this section of I-80.

Project Title
Richmond Parkway—Grade-separated interchange at San Pablo Avenue

Project Description
Provide an interchange at the existing signalized intersection of Richmond Parkway and San Pablo Avenue.

Project Background
- Initially included in the Richmond Parkway project concept. It was deleted as a cost-cutting measure along with the widening of Section 6 from San Pablo Avenue to I-80.
- A PSR for Segment 6 of the Parkway was prepared by Sverdrup, Inc. in 1993. At that time the construction costs were estimated to be $7.4 to $8.1 million. As part of the Parkway project, the City acquired most of the ROW needed for the proposed project.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $10 million (1999$)
Total Annual Operating Costs: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Interchange improvements will improve service and operations along the Richmond Parkway.

Project Title
San Pablo Dam Road Improvements

Project Description
Signal / turn channelization, bus stop, pedestrian / bikeway upgrades on San Pablo Dam Road from Tri Lane to El Portal Drive through Richmond/El Sobrante.

Project Background
- Identified in the San Pablo Dam Road Action Plan (1998).
- The City of Richmond and Contra Costa County are undertaking an alignment study to determine the ultimate upgrades to construct.
- Contra Costa County is undertaking an economic revitalization study in Downtown San Pablo to determine improvements for pedestrian, transit, bicycle, and internal circulation between Appian Way and El Portal Drive.
- Related Blueprint projects include the reconstruction of the I-80/San Pablo Dam Road interchange and the bus transit upgrades to San Pablo Dam Road.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $7.0 million (1999$)
Total Annual Operating Costs: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- San Pablo Dam Road improvements seek to balance the interests of the business community and local residents with regards to the need to accommodate commuter traffic.
- Improvements are to facilitate commuter traffic along this well-traveled corridor while maintaining a high level of community livability and quality of life for adjacent neighborhoods.

Project Title
Widening of I-80 between Vacaville and Dixon

Project Description
Widen I-80 between Vacaville and Dixon from 3 lanes to 4 lanes. This segment of I-80 currently narrows to three lanes in each direction.

Project Background
- The 1998 Regional Transportation Plan (RTP) Track 1 includes the I-80 HOV lanes between Fairfield and Vacaville.
- Environmental and design work funded in the 1998 STIP.
- Included in the SACOG/MTC Strategic Transportation Planning Study (1989).

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $34.5 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Cost estimate is for widening of I-80 from 3 to 4 lanes in each direction between I-505 and Pedrick Rd. Cost comes from the sum of two adjacent projects.
- Increasing commute, truck, and recreational traffic volumes have caused congestion and traffic delays along the I-80 corridor.

Project Title
I-80/I-680/SR 12 Interchange Improvements

Project Description
Improve interchange configuration. Project scope to be determined.

Project Background
- $7 million in auxiliary lane improvements are programmed in the 1998 STIP.
- Phase I is contained in 1999 TIP to reconstruct I-680 direct connectors and auxiliary lanes (covers 1.9 miles).
- Included in SACOG/MTC Strategic Transportation Planning Study (1989).
- Phase I is estimated at $7.1 million.
- The City of Fairfield has conceptualized the preliminary scope of work for each of nine phases of the interchange improvements and prepared an initial cost estimate, which totals $400.0 million, as shown below.
    - Phase 1: Construct a two-lane I-680 Northbound to I-80 Eastbound off-ramp and complete the auxiliary lane to the Eastbound I-80 Truck Scales. ($8 million Funded)
    - Phase 2: Improve the Green Valley Rd/I-80 Interchange with new ramp connectors to I-80/I-680 and install a westbound I-80 auxiliary lane to Highway 12 (Napa). Caltrans District 4 has approved a Project Study Report for this interchange. ($19 million)
    - Phase 3: Improve the Suisun Valley Rd./I-80 Interchange, and extend the Westbound I-80 Truck Scale auxiliary lane to the I-680 Southbound on-ramp. ($12.0 million)
    - Phase 4: Construct the Red Top Rd/I-680 Northbound off-ramp and Southbound on-ramp. ($7.0 million)
    - Phase 5: Construct the Red Top Rd/Highway 12 Eastbound off-ramp and Westbound on-ramp and improve the Red Top Rd/I-80 Interchange. ($14.0 million)
    - Phase 6: Install the I-80/I-680 Northbound to Eastbound and Westbound to Southbound freeway-to-freeway connectors and relocate I-80 Truck Scales. Complete the following four interchanges: Suisun Valley Rd/I-80, Green Valley/I-80, Red Top Rd/I-80 and Red Top Rd/I-680. ($250.0 million)
    - Phase 7: Install the I-680/Highway 12 freeway-to-freeway connectors and complete the Red Top Rd/Highway 12 interchange. ($35.0 million)
    - Phase 8: Install the I-80/I-680 Northbound to Westbound and Eastbound to Southbound freeway-to-freeway connectors. ($20.0 million)
    - Phase 9: Install the I-80/Highway 12 Eastbound to Westbound (I-80 to Highway 12) and Eastbound to Westbound (Highway 12 to I-80) freeway to freeway connectors. ($35.0 million)

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $400 million (1999$) for 9 phases
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Interchange is a bottleneck due to increasing traffic volumes on the I-80 corridor.

Project Title
Express Bus Services on I-80 HOV lanes from Carquinez Bridge to Bay Bridge

Project Description
Operate express bus services from communities throughout I-80 HOV corridor to serve San Francisco and to connect with BART to serve East Bay markets.

Add park-and-ride and intermodal facilities as a necessary adjunct.

Project Background
- The purchase of buses for the I-80 express service is included in the 1998 Regional Transportation Plan (RTP) Track 1. The Blueprint would accelerate the delivery of this project.
- Included in I-80 Corridor Study (1996).

Proposed Operating Scenario
The initial focus is to upgrade and expand express bus connections to BART and to Vallejo Ferry service from Solano County. Express bus service levels from Fairfield/Vacaville area to BART would be increased to 30 minute peak period services by 2000.

Between 2001 and 2005:
Express bus services directly serving San Francisco from Solano, Contra Costa and Alameda Counties would be added using HOV lane between Route 4 and the Bay Bridge. Express bus services in the corridor would be incrementally increased through the subsequent stages of the plan, resulting in:
- 15 minute peak service from Solano County communities directly to San Francisco,
- 30 minute service between the Crockett/Hercules area and San Francisco, and
- 10 to 15 minute peak services from the Albany, Berkeley, and Emeryville areas and San Francisco in 2015.

By 2015:
- Provide 30 minute peak service- Fairfield/Vacaville to El Cerrito Del Norte BART
- Provide 10 minute peak period service between Fairfield and Vallejo and San Francisco (18 buses)
- Provide 15 minute peak service between Crockett, Hercules and El Cerrito Del Norte BART Station
- Provide 30 minute peak period service between Crockett, Hercules, and San Francisco (15 buses)
- Provide 10 minute peak period service between El Sobrante and San Francisco (10 buses)
- Provide 10 minute peak period service between Albany/Berkeley/Emeryville and San Francisco (15 buses)

Estimated Costs
Capital: $56.6 million (reflects total costs between 2005 and 2015) (1996$)
Total Annual Operating Costs: $74.3 million (reflects total costs between 2005 and 2015) (Ops. Subsidy 5-years) (1996$)
Farebox Recovery Assumed: 28.8%
Net Annual Operating Cost: $2.14 million

Observations/Issues
- The I-80 Corridor Study (1996) estimated that about 10,000 more transit and carpool trips are projected to occur in the corridor in 2015. About 4,300 persons per hour would use the lanes during peak periods, equivalent to about two freeway lanes, on the HOV lane between the Bay Bridge and Route 4 are also projected.
- It also indicated that significantly faster travel times through the corridor will result for HOV travelers and transit riders in 2010.
- Travel options for commuters are expanded by introducing and expanding express bus services to communities in the corridor that are not presently served by express buses and providing a balanced mix of travel options for corridor commuters.

Project Title
Enhanced transit service in San Pablo/Telegraph Corridors

Project Description
Transit improvements would include high-capacity articulated buses, new stations and shelters, lighting, signalization for buses and other bus related enhancements.

Project Background
- The AC Transit enhanced bus service within the Telegraph Corridor project is included in the 1998 Regional Transportation Plan (RTP) Track 2.
- Included in the unsuccessful Alameda County Measure B sales tax measure (1998). One corridor (either San Pablo and/or Telegraph Avenue) was placed on Tier 1 and two additional corridors were placed on Tier 2.
- The corridor is being studied by AC Transit for potential major capital investment.

Proposed Operating Scenario
To be determined following corridor study.

Estimated Costs
Capital: $64.0 million (3 corridors)
Total Annual Operating Cost: $3.92 million (1999$)
Farebox Recovery Assumed: 25%
Net Annual Operating Cost: $2.93 million (1999$)

Observations/Issues
- Transit upgrades seek to provide high quality service, improve travel times and attract ridership on AC Transit service in Alameda and Contra Costa Counties.
- Upgraded bus service is seen as a viable alternative to construction of a light rail system, which would be significantly more expensive to construct and operate.

Project Title
Capitol Corridor/Commuter Rail Service between Solano County and Oakland

Project Description
Add 3 daily commute period round trips between Solano County and Oakland.

Project Background
- The improvements to Capitol Corridor intercity rail service project is included in the 1998 Regional Transportation Plan (RTP) Track 2.
- Existing intercity rail service is 6 round trips a day with limited service in the peak commute period.
- Included in MTC's Regional Rail Reconnaissance (1998).
- Included in the I-80 Corridor Study (1996).
- Solano County Sales Tax Advisory sampled voter attitudes concerning sales tax funding in support of commuter rail service to BART (1998). Results indicated support for commuter service.

Proposed Operating Scenario
Provide 3 new round trips in the AM and PM commute period between Solano County and Oakland.

Estimated Costs
Capital: $25 million (rolling stock) (1998$)
Total Annual Operating Cost: $10 million (3 round trips) (1998$)
Farebox Recovery Assumed: 35%
Net Annual Operating Cost: $6.48 million (1999$)

Observations/Issues
- Existing passenger rail service in the corridor, the "Capitols", is operated as "intercity" service with a focus on meeting the needs of long-distance, non-commuter travel. It is administered by the Capitol Corridor Joint Powers Authority (CCJPA) and funded by the State. The introduction of commuter service would require the creation of a separate agency to administer and operate the service, or more likely, an arrangement with CCJPA to do so. Most, if not all, of the funding support would have to come from local sources. State funds are currently unavailable for commuter rail services.
- I-80 Corridor Study concluded that adding a moderate level of commuter service to the existing Capitol Corridor rail service operating between Sacramento and the Bay Area would substantially increase the overall effectiveness of this service. The analysis projects between 3,000 and 4,000 new daily riders would use commute services between Dixon and Oakland. However, beyond the initial increment of ridership growth, significant ridership increases for services operated within the MTC region is not projected. (Riders originating outside of the region (e.g., Sacramento area) are not captured in these estimates.
- Commuter service seeks to provide alternative travel options to autos on the congested I-80 corridor. Comfort, reliability, frequency, and on-time performance are critical factors for rail service viability.

Project Title
Capitol Corridor/West Oakland BART Connection

Project Description
Project scope to be determined. Initial concepts include either constructing a second West Oakland BART/rail station on the Capitol Corridor line or provide a rail connection to the existing West Oakland BART station.

Project Background
- Included in the 1998 Regional Transportation Plan (RTP) Track 2.
- Included in the I-80 Corridor Study (1996).

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $25.9 milion for one station (1999$)
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- Construction of a new rail station improves the transit connection for trips between the Bay Area and Sacramento.
- A direct connection between the Capitols and BART will significantly reduce travel time for rail passengers with origins or destinations in San Francisco.
- Issues related to engineering feasibility and operating policies remain to be resolved by the agencies involved.

Project Title
Capitol Corridor/Rail Station in Hercules

Project Description
Add new rail station in Hercules to serve Capitol Corridor intercity rail service (includes parking for 100+ vehicles).

Project Background
- Included in MTC's Regional Rail Reconnaissance (1998).
- Included in the I-80 Corridor Study (1996).
- The I-80 Corridor Study recommended operation of Capitol Corridor service to provide 3 daily round trips between Solano County and Oakland by 2010 and construction of new rail stations in Fairfield, Benicia, Dixon, and Hercules.
- Specific station locations are to be determined as part of Capitol Corridor rail service implementation planning.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $26.6 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- If operated as an intercity station, Capitol Corridor Joint Powers Authority (CCJPA) will have to approve the Hercules station as a "Capitols" stop (must be consistent with CCJPA new station policy).
- The Hercules station may function better as a commuter rail station.

Project Title
BART Extension—Hilltop Mall or Pinole Vista/Pinole Shores

Project Description
Extend BART service from the Richmond BART Station to either the Hilltop Mall in Richmond near I-80 or a Pinole Vista or Pinole Shores station site, a distance of from 4.5 to 7.7 miles. Add two stations.

Project Background
- Included in MTC Regional Rail Reconnaissance (1998).
- Included in Phase II, BART Extension Staging Policy.
- Evaluated in a number of BART studies, e.g., West Contra Costa Extension Study (1992).

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $345 million to $940 million (1998$)
Total Annual Operating Cost: $0.49 million to $0.83 million (1999$)
Farebox Recovery Assumed: 57%
Net Annual Operating Cost: $0.21 million to $0.73 million (1999$)

Observations/Issues
- BART extension would improve access to BART for residents and workers in north-western Contra Costa County and in the North Bay.
- BART extension would "capture" I-80 commuters further north on I-80, removing traffic from freeway.

Project Title
BART Extension to Hercules

Project Description
Extend BART service from the Richmond BART Station to Hercules with feeder bus services.

Project Background
- Included as an alternative studied in I-80 Corridor Study (1996), but not a recommended project in the I-80 Corridor investment plan.
- Identified as Priority 3, Phase 2/3 extension in BART's FY 2000 Capital Improvement Program.

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $700 million (1996$)
Total Annual Operating Cost: $250 million (10 years of operation and maintenance costs) (1996$)
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- BART extension would improve access to BART for residents and workers in north-western Contra Costa County and in the North Bay.
- BART extension would relieve traffic on I-80.

Project Title
Additional Vallejo Ferry Service

Project Description
Add a third 350-400 passenger High-Speed Ferry to meet peak period demand at the Vallejo Ferry Terminal.

Project Background
- Included in the 1998 Regional Transportation Plan (RTP) Track 2.
- Included in MTC 1999 San Francisco Bay Area Regional Ferry Plan Update, City of Vallejo Short-Range Transit Plan, and Bay Area Council 1999 High-Speed Water Transit System Plan.
- Ridership on the Vallejo ferry service continues to grow. Since acquisition of two high-speed vessels and initiation of an 11 round trip service (replacing the former five round trip schedule), approximately 69,000 passengers used the service in July 1998, compared to 50,000 in July 1997, a month after the new service was initiated, and 33,000 in July 1996. Average July 1998 ridership on weekdays was 2,350, on weekends 1,925.
- The Vallejo ferry service operating budget increased by approximately 60 percent with the introduction of two vessel service in May 1997. Ridership increased by 102 percent during the same time frame.
- Richmond/San Francisco ferry service started up the end of September 1999 with initial average weekday ridership less than 200.

Proposed Operating Scenario
MTC Ferry Plan:
Given the number of trips operating at capacity and inability of two vessels to make more than three peak direction commute trips on this 55 minute route, a third 35 knot vessel is required to meet the peak period demand. A third high-speed vessel could increase the number of commute trips from three to five, allowing an increase from a maximum of 900 commute trips to as many as 1,500.

Bay Area Council Water Transit System Plan:
Provide 15 minute peak and 30 minute off-peak headways from Vallejo to San Francisco within a travel time of 50 minutes.

Estimated Costs
Capital: $8.5 to 9 million (1999$)
Total Annual Operating Cost: $4.5 million (1999$)
Farebox Recovery Assumed: 61%
Net Annual Operating Cost: $2.734 million (1999$)

Observations/Issues
- Additional ferry service from Vallejo will address the increasing demand for ferry service during commute times from Vallejo to San Francisco.

Project Title
Intermodal Facilities for Vallejo Ferry Service

Project Description
- An intermodal transportation facility at Vallejo Ferry Terminal is required to facilitate the continued growth of this ferry service. Project elements include a parking structure, improved facilities for bus to ferry and kiss-ride connections, and possible future Napa County rail linkage.
- An interim maintenance facility on Mare Island has been developed to service the Vallejo Ferry Terminal. Phase 2 improvements would construct permanent office space to replace trailers, expand heavy maintenance shop space, and could include up to 100,000 gallons of above-ground fuel storage.

Project Background
- Included in MTC 1999 San Francisco Bay Area Regional Ferry Plan Update.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $17 million (1999$)
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Current and anticipated passenger loads on the Vallejo service are overwhelming the available 700 to 800 parking spaces currently available adjacent to the ferry terminal. Increasing demand and City desire to allow development on a portion of the existing parking area require development of a parking structure and improved facilities for bus to ferry and kiss-ride connections.
- The maintenance facility could become a regional, North Bay ferry maintenance base if additional services are initiated from Martinez, Benicia, or Port Sonoma.

Project Title
New Ferry Service from Berkeley/Albany

Project Description
Establish a new route and ferry service from a Berkeley/Albany ferry terminal.

Project Background
- Included in MTC 1999 San Francisco Bay Area Regional Ferry Plan Update which recommended further planning and engineering of this route, both for regular service and as a site for potential emergency ferry service.
- Included in the Bay Area Council 1999 High-Speed Water Transit System Plan.
- The MTC 1992 San Francisco Bay Area Regional Ferry Plan recommended a Berkeley/Albany ferry terminal at the foot of Gilman Street in the City of Berkeley. In 1993, the City of Berkeley requested but was not granted $220,000 in Transportation Enhancement Activities (TEA) funding to provide for planning and environmental review of the project.
- In 1978-79 and 1989, emergency ferries operated from a terminal in the southeast corner of the Berkeley marina. This terminal has parking limitations, with much of the paved area used for parking for existing uses. Operationally, ferries operate slowly within the marina to prevent damage to other vessels and to limit wake.

Proposed Operating Scenario
MTC Ferry Plan:
Different service alternatives were considered for a Berkeley/Albany ferry. One scenario anticipates one 250 passenger vessel providing hourly service to San Francisco. Another scenario anticipates 30 minute service frequencies using two 149 passenger boats. A third scenario anticipates 20 minute service in the peak periods, with 30 minute service in the off-peak.

Bay Area Council Water Transit System Plan:
Provide 15 minute peak and 60 minute off-peak headways from Berkeley to San Francisco/Mission Bay to Alameda within a travel time of 45 minutes and 30 minute peak and 60 minute off-peak headway to Treasure Island within travel time of 15 minutes.

Estimated Costs
Capital: $15.5 million (1999$)
Total Annual Operating Cost:
- $0.592 million (hourly) (1999$)
- $1.274 million (30 minute) (1999$)
- $1.595 million (20 minute) (1999$)

Farebox Recovery Assumed: 58% (hourly), 46% (30 minute), 43% (20 minute)
Net Annual Operating Cost:
- $2,275 daily (hourly)
- $4,900 daily (30 minute)
- $6,135 daily (20 minute)

Observations/Issues
- This route has the potential to be one of the most used maritime services on the Bay with 1,200-1,600 passengers daily (weekday) if it is provided with a visible location, good access and supportive adjacent land uses.
- The Gilman site is the only area of the Berkeley Waterfront available for any type of development. All other uses are primarily recreational and may not be compatible with an intensive ferry transit operation. Supporting developments in the waterfront area and recreational docking facilities to boost overall ridership could increase route success.
- Ferry riders would probably be equally split between BART users and drive alone automobile users.
- A Gilman ferry terminal could be served by several reroutings and extensions of AC Transit Lines 9, 52, and 43.
- This terminal could link the Eastshore State Park with the Golden Gate National Recreation Area at the Presidio and Fort Baker.

Project Title
New Ferry Service from Martinez/Benicia

Project Description
Establish a new route and ferry service from a Martinez/Benicia ferry terminal.

Project Background
- The ferry service from Benicia and Vallejo to San Francisco project is included in the 1998 Regional Transportation Plan Track 2.
- Included in MTC 1999 San Francisco Bay Area Regional Ferry Plan Update and Bay Area Council 1999 High-Speed Water Transit System Plan.
- City of Martinez completed a new Marina Master Plan, prepared a conceptual engineering and planning study for a ferry terminal and successfully obtained a $250,000 FHWA Section 1064 grant for ferry facilities.
- Planning is complete for Martinez. This route is ready to move into implementation (including final design, construction and vessel acquisition, and operations) once capital and operating funding is secured. To date, no funding has been available for this ferry service.

Proposed Operating Scenario
MTC Ferry Plan:
Operating scenarios considered include: operate three commute trips and limited midday service, three commute trips with no midday service, and two commute trips with no midday service.

Bay Area Council Water Transit System Plan:
Provide 30 minute peak and 60 minute off-peak headways from Benicia to Martinez to San Francisco within a travel time of 60 minutes.

Estimated Costs
Capital: $20.7 to 23.7 million (1999$)
(assumes two large vessels)
Total Annual Operating Cost:
- $0.364 million (no midday/ 1 boat)
- $.572 million (no midday service)
- $1.170 million (midday service)(1999$)

Farebox Recovery Assumed: 74% (no midday/ 1 boat), 69% (no midday service), 57% (midday service)
Net Annual Operating Cost:
- $1,400 daily (no midday/1boat)
- $2,200 daily (no midday/1boat)
- $4,500 daily (midday service)

Observations/Issues
- Further planning and engineering work is needed to determine which of several alternative sites in Benicia should be selected for docking sites. Availability of adequate parking, local street access, and connecting transit service should be considered in the analysis.
- Even before funding is identified for full ferry service implementation, docks in these locations should be a high priority for emergency earthquake response facilities because of the critical Bay Area to Solano County and Sacramento linkage across the Carquinez Straight.

Project Title
New Ferry Service from Richmond

Project Description
Operate a ferry route between the City of Richmond's southside shoreline and the San Francisco Ferry Building.

Project Background
- Prior to bridges, ferries linked Richmond and San Francisco via the Sante Fe Railway's maritime operation as well as Richmond and San Rafael before the bridge was completed in the late 1950s.
- After the Loma Prieta earthquake closed the Bay Bridge, Caltrans initiated emergency ferry service between Richmond and San Francisco. The 45-minute service attracted just under a thousand daily passengers, which dropped to 300-400 daily patrons after the bridge re-opened.
- Most recently, growth has recently been redirected from outlying areas near El Sobrante and the Hilltop area in Richmond to the older industrial waterfront. New developments have been built in Marina Bay, Brickyard Cove, and Brickyard Landing.
- Included in the MTC 1992 San Francisco Bay Area Regional Ferry Plan and Bay Area Council 1999 High-Speed Water Transit System Plan.
- Ferry service from Richmond has recently been reinstated (September 1999) with about 100 riders per day. The duration of this new service is uncertain.

Proposed Operating Scenario
1992 MTC Ferry Plan:
Proposed ferry location is at Marina Bay. Ferry route would be from Richmond to the San Francisco Ferry Building. Travel time is 45 minutes.

Bay Area Council Water Transit System Plan:
Routes could use 150-passenger, 25-knot vessels, or deploy faster vessels. About 1,000 passengers are projected to use this service. Provide 15 minute peak and 30 minute off-peak headways from Richmond to San Francisco to South San Francisco within a travel time of 45 minutes.

Estimated Costs
Capital: $3.0 million for vessel plus $2.4 million for facilities (1999$)
Total Annual Operating Costs: $1.06 million (1999$)
Farebox Recovery Assumed: 41%
Net Annual Operating Cost: $435,000 (1999$)

Observations/Issues
- Initial projections from the 1992 analysis indicate that the ferry service travel time is about half of the travel time by automobile from Richmond, but only for a limited number of residents living close to the proposed terminal. The majority of the commute market is closer to the BART stations and AC Transit express bus services. The service would carry about 240 peak period passengers, which would be about 10 percent of a lane on I-80.
- Redevelopment of the Richmond area could by stimulated by the ferry service, especially in the core area and along the Richmond waterfront.

Project Title
Light Rail on the Carquinez Replacement Bridge

Project Description
The Carquinez Replacement Bridge will have the capacity to accommodate a light rail service on the structure.

Project Background
- The Long Range Rail Alignment Report for the I-80 and I-680 Corridors reviewed many of the possible alignments that could be used for light rail service across the Carquinez and Benicia bridges.

Proposed Operating Scenario
Carquinez Replacement Bridge - A 30 mile route between the Richmond BART station and Napa (via Hercules and Vallejo) or a shorter system originating at the Capitol Corridor in Hercules and extending to the Vallejo Ferry Terminal, approximately 9 miles. Both routes would use existing rail rights of way. Cost estimates range between $92-$194 million.

Estimated Costs
Capital: $92 - $194 million (1999$)
Total Annual Operating Costs: $9.5 - $31.8 million (1999$)
Farebox Recovery Assumed: 9%
Net Annual Operating Costs: $8.6 million - $28.7 million

Observations/Issues
- The options for light rail service on the Benicia and Carquinez Bridges have been preserved through Caltrans' design of the two bridges.
- Ridership to justify these rail projects is not expected to develop in the short term.

Project Title
Solano County Bus Service

Project Description
- Upgrade express/local bus services between Vacaville/Fairfield and Vallejo
- Provide new express service from Sacramento to Vallejo
- Provide new Solano Intercity service

Project Background
- The purchase of buses for the Solano County intercity service is included in the 1998 Regional Transportation Plan (RTP) Track 1. The Blueprint would accelerate the delivery of this project.
- Service from Vacaville/Fairfield to Vallejo is included in I-80 Corridor Study (1996).
- Sacramento to Vallejo express service and Solano Intercity service are included in the Solano Intercity Transit Concept Plan (1995).

Proposed Operating Scenario
Vacaville/Fairfield Service:
- Provide 30 minute service by 2005.
- Provide 30 minute service by 2010.
- Provide 15 minute service by 2015.

Sacramento to Vallejo Service:
- Provide 9 minute service in peak, 60 minute service at midday.

Solano Intercity Service:
- Provide 10 minute service in peak, 60 minute service at midday.

Estimated Costs
Vacaville/Fairfield to Vallejo Service:
Capital: $11.5 million (1996$) (reflects total costs from 2005 to 2015)
Total Annual Operating Cost: $24.4 million (1996$) (This is the total operating subsidy for 5 years. Reflects total costs from 2005 to 2015.)
Farebox Recovery Assumed: 85%
Net Annual Operating Cost: $3.73 million (1999$)

Vallejo to Sacramento Service:
Capital: TBD (19 buses)
Total Annual Operating Cost: $2.3 million (1995$)
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: $1.84 million (1999$)

Solano Intercity Service:
Capital: TBD (20 buses)
Total Annual Operating Cost: $2.6 million (1995$)
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: $2.08 million (1999$)

Observations/Issues
- Benefits of these service enhancements are expanded travel options in the congested I-80 corridor.
- The I-80 Corridor Study determined that commute between Vacaville/Fairfield to Vallejo is projected to substantially increase (32%) by 2010 and upgrades to the express bus services between these communities can serve this market cost effectively.
- According to the I-80 Corridor Study, about 10,000 more transit and carpool trips are projected to occur in the corridor in 2015.
- Expanded intercity/express bus service will facilitate travel within Solano County on I-80, from Solano County to San Francisco, and north from Solano County into Sacramento County.

Project Title
West Contra Costa County Intercity Bus Service

Project Description
Upgrade express/local bus services within West Contra Costa County: Hercules/del Norte BART, El Sobrante/San Francisco, Richmond/Martinez/Route 4, Crockett/Hercules/Berkeley, and Hercules/San Francisco.

Project Background
N/A

Proposed Operating Scenario
- Provide 15 minute service in peak and 30 minutes in midday - Hercules/del Norte BART (BART Express - Route J)
- Provide 30 minute service in peak and midday - El Sobrante/San Francisco (AC Transit - Route L)
- Provide 30 minute service in peak and midday - Richmond/Martinez/SR 4 (WestCat - Route 30Z)
- Provide 15 minute service in peak and midday - Crockett/Hercules/Berkeley (AC Transit - new route)
- Provide 15 minute service in peak and offpeak - Crockett to Hercules (WestCat - Route 11)
- Provide 15 minute service in peak and 30 in midday - Hercules/San Francisco (AC Transit - new route)

Estimated Costs
Capital: $5.28 million (1999$)
Total Annual Operating Cost: $3.72 million (1999$)
Farebox Recovery Assumed: 22%
Net Annual Operating Cost: $2.91 million (1999$)

Observations/Issues
- Expanded intercity bus service is desirable within West Contra Costa County to serve emerging markets and transit needs within these communities.
- Other benefits of these increased services are improved travel options.

Project Title
Improved Bus Transit on San Pablo Dam Road

Project Description
Improve coordination and frequency of buses operated by County Connection and AC Transit between the Orinda BART station and San Pablo.

Project Background
- Identified in the San Pablo Dam Road/Camino Pablo Corridor Action Plan (1998).
- Identified in Contra Costa Welfare to Work Transportation Action Plan which calls for improvement in transit access between low income areas of West County and job centers in Central County.
- Related projects include the San Pablo Dam Road improvements (which will identify signal modification, bus turn-outs and pedestrian upgrades), the I-80/San Pablo Dam Road interchange reconstruction, and the San Pablo Dam Road/Camino Pablo HOV Facility Needs Study (which will examine improvements to speeds and bus and carpool travel along the corridor).

Proposed Operating Scenario
Provide 60 minute service in off-peak hours, extend to Contra Costa College and coordinate County Connection Route 950 with AC Transit Route 69.

Estimated Costs
Capital: $1.2 million (4 buses) (1999$)
Total Annual Operating Cost: $560,000
Farebox Recovery Assumed: 11%+
Net Annual Operating Cost: $464,800 (1999$)

Observations/Issues
- Improved bus services along San Pablo Dam Road will improve transit access between low income areas of West County and job centers in Central County.
- Current 30-minute peak period service funded by Contra Costa County Measure C funds at $165,000 annually. Service interlines with bus route in Orinda to reduce need for buses.
- Currently, passengers between San Pablo and Orinda BART station must transfer between County Connection Route 950 and AC Transit Route 69 at Castro Ranch Road in the City of Richmond.

Section F

State Route 4 Corridor

State Route 4 Corridor

- Interstate Highway
- State Highway
- U.S. Highway
- Freeway
- Other Highway
- Major Arterial
- Airport
- Port
- Ferry Terminal
- Rail Line
- Amtrak Station
- ACE Station
- Caltrain Station
- BART Line/Station

(A) SR 239 Connection—Brentwood to Tracy

(B) SR 4 Interchange Improvements

(C) Widening of SR 4 East Corridor

(D) State Route 4 Bypass widening from 2 to 4 lanes from Route 160 to Walnut Blvd.; and construction of new grade separations and interchanges along the State Route 4 Bypass

(E) Widening of SR 4 from I-680 to SR 242

(F) Truck Climbing Lanes on Kirker Pass Road

(G) Pittsburg/Bay Point BART Station Parking Expansion

(H) BART Extension to Railroad Ave. in Pittsburg

(I) BART Extension to Hillcrest Ave. in Antioch

(J) Ferry Service from Antioch

Not Mapped:

- Express Bus Service in SR 4 HOV Lanes (East County to Pittsburg/Bay Point BART Station)
- Subscription Bus Service on Vasco Road—Brentwood/Antioch to Tri-Valley
- Commuter Rail—Brentwood to Bay Point
- ACE Branch Line—Brentwood to Tracy

Project Title
SR 239 Connection—Brentwood to Tracy (Byron Highway)

Project Description
Connect SR 4 south of Brentwood to Route 205 and I-580 west of Tracy with an expressway freeway.

Project Background

- The SR 4 Transportation Corridor Concept report completed by Caltrans in November 1997 identified a need for increased transportation capacity in Eastern Contra Costa County. It recommends that improvements to SR 4 east to Stockton not be made; rather efforts should be focused on implementing SR 239, a legislated route.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $1 billion (1997$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues

- San Joaquin County has approved Mountain House, a new community in the vicinity of proposed SR 239. Its EIR calls for four lanes on Byron Highway which is the local access, from SR 4 to SR 205/I-580.
- Byron Highway currently carries 25% truck traffic.
- The north end of SR 239 would connect to SR 4/Vasco Road in the vicinity of Byron airport. This alignment would move SR 239 out of Byron and would provide a better connection to other regional routes.

Project Title
SR 4 Interchange Improvements
- Hillcrest Avenue
- Contra Loma
- Miscellaneous

Project Description
Several older interchanges along SR 4, including Hillcrest Avenue and Contra Loma, will need to be improved to address traffic growth in the corridor.

Project Background
- Identified in the 1999 Route 4 East MIS.
- Transportation improvements in the SR 4 East Corridor have been a priority for a long time and were identified in Contra Costa's Measure C ½ cent sales tax measure in 1988.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $60 million (1997$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- SR 4 is the primary east-west transportation corridor in Contra Costa County. It serves as East County's primary commute and commerce route.

Project Title
Widening of State Route 4 East Corridor

Project Description
Widening State Route 4 includes:
- Widening Route 4 to 8 lanes between Railroad Avenue and Hillcrest Avenue; stripe the inside lane between Railroad Avenue and Hillcrest Avenue for HOVs
- Widen Route 4 to 6 lanes between Hillcrest Avenue and the SR 4 Bypass interchange
- Widen median to accommodate the future extension of BART between Railroad Avenue and Hillcrest Avenue

Project Background
- The Route 4 improvements beyond Railroad Avenue to Route 160 project was included in the 1998 Regional Transportation Plan (RTP) Track 1. This SR 4 widening project goes beyond the improvements identified in the RTP.
- Included as the Long-Term Recommended Strategy in the 1999 Route 4 East MIS.
- Transportation improvements in the SR 4 East Corridor have been a priority for a long time and were identified in Contra Costa's Measure C ½ cent sales tax measure in 1988.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $400 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- SR 4 is the primary east-west transportation corridor in Contra Costa County. It serves as East County's primary commute and commerce route.
- This project would provide significant additional corridor capacity and a more balanced transportation network with significant HOV and transit mode incentives.

Project Title
State Route 4 Bypass widening from 2 to 4 lanes from Route 160 to Walnut Blvd. and construction of new grade separations and interchanges along the State Route 4 Bypass

Project Description
Widen State Route 4 Bypass from 2 to 4 lanes from Route 160 to Walnut Blvd., eliminate temporary at-grade intersections by constructing grade separations, and upgrade signalized intersections to interchanges. Possible interchange or grade-separation locations include:

- Freeway-to-freeway direct connectors from SR 4 Bypass to and from SR 160 north
- Laurel Rd. Extension (tentative)
  - Lone Tree Way
- Relocated Sand Creek Rd.
- Balfour Rd.
- Marsh Creek Rd.
- Walnut Blvd.

Project Background
- The 1998 Regional Transportation Plan (RTP) includes the State Route 4 Bypass—construct a 2-lane facility from Route 4 to Walnut Blvd., upgrade Marsh Creek Rd. and construct a partial freeway to freeway interchange one mile east of Hillcrest at State Route 4/SR 160—as a project with fully committed funding from local housing fees. Phasing plans are currently under discussion.
- The 1998 RTP also includes unspecified segments of the State Route 4 Bypass as an ultimate four-lane freeway facility as a Track 1 project. The Blueprint would accelerate the delivery of this Track 1 project.
- The ultimate configuration for the State Route 4 Bypass includes elimination of at-grade intersections and upgrading to freeway standards.

Proposed Operating Scenario
N/A

Estimated Costs
Capital:
- $30.9 million (1999$) for upgrading unspecified segments of the State Route 4 Bypass to a four-lane freeway facility
- At-Grade Intersection Upgrades: $92 million (1999$)
  - SR 4/SR 160 to and from the north ($12 million)
  - Widening to 4 lanes: SR 4/SR 160 to Lone Tree Way ($10 million)
  - Upgrade Laurel Rd. to an interchange ($10 million)
  - Lone Tree Way I/C upgrade from partial to full ($8 million)
  - Widen to four lanes-Lone Tree Way to Balfour Rd. ($12 million)
  - Interchange at Sand Creek Rd. ($12 million)
  - Interchange at Balfour Rd. ($12 million)
  - Interchange at Marsh Creek Rd. ($8 million)
  - Interchange at Walnut Blvd. ($8 million)

Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This project will improve the capacity and safety on the Route 4 corridor between Antioch and Brentwood, and will divert traffic away from existing surface streets.
- Traffic demands in this corridor far exceed the capacity of the existing system.
- The State Route 4 Bypass will ultimately connect to SR 239, providing an improved gateway for connections to the Central Valley and destinations south.

Project Title
Widening of SR 4 to six lanes from I-680 to SR 242

Project Description
Widen a 3-mile segment of SR 4 from 4 lanes to 6 lanes between Pacheco Boulevard (approximately 0.5 miles west of I-680) to Route 242 (approximately 2.5 miles east of I-680). Minor modifications are anticipated at the Pacheco Boulevard ramps, I-680 Interchange, Arnold Industrial Way ramps, and at the SR 242 Junction to maintain access and provide adequate traffic operations. Bridge structure widening is necessary at the Pacheco Boulevard, I-680, Grayson Creek, Walnut Creek, Solano Way, and Peralta Road crossings.

Project Background
- Proposed improvements are consistent with ongoing improvement projects along the SR 4 East and West corridors.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $14 million (conceptual estimate only) (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Sufficient right-of-way is assumed to exist to accommodate the proposed improvements along SR 4.
- These improvements would help relieve congestion along both east and west SR 4.

Project Title
Kirker Pass Road Truck Climbing Lanes

Project Description
Add a westbound truck climbing lane from Nortonville Road and an eastbound truck climbing lane from Concord Pavilion.

Project Background
- Included in the County General Plan (1991), the CCTA Countywide. Comprehensive Transportation Plan (1995), and SR 4 Corridor Management Plan (1998).

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $3.25 million (1990$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Grades over Kirker Pass range from 7 to 11%. Truck traffic significantly reduces capacity in the outside lane.
- The proposed improvements will permit slow trucks to move out of the normal traffic lane, thus improving both operations and safety on the roadway.
- Truck climbing lanes will reduce delays and increase safety for vehicles traveling behind slow moving trucks.

Project Title
BART Pittsburg/Bay Point Station Parking Expansion

Project Description
Add 500 parking spaces at the Pittsburg/Bay Point station by acquiring a vacant parcel adjacent to the station and constructing a new surface parking lot.

Project Background
- Submitted for funding under Cycle 1 STP/CMAQ Program (1999).
- Included as part of the analysis of alternatives in 1999 Route 4 East MIS.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $4.2 million (1998$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Existing parking lot is 100% full by 8:30 AM on weekdays.
- According to the Highway 4 MIS, ridership in the year 2020 without any further extension of BART would increase from an existing ridership of 10,240 riders to approximately 17,250 riders at the Pittsburg/Bay Point station. This estimate is based on an unconstrained parking scenario.
- With improved parking at the station, BART ridership is projected to increase which would help reduce traffic along the SR 4 corridor.

Project Title
BART Extension along SR 4 to Railroad Avenue in Pittsburg

Project Description
Extend BART service from existing Pittsburg/Baypoint Avenue in the Route 4 median, a distance of 3 miles (or a site between Loveridge Road and Somersville Road, a distance of 5 miles) and add one station.

Project Background
- Included in MTC's Regional Reconnaissance (1998), Resolution 1876 (planning).
- Included in Phase I, BART Extension Staging Policy.
- Evaluated in a number of BART studies: e.g., Pittsburg-Antioch Corridor Alternatives Analysis/DEIR (August 1988).
- Considered in Route 4 East MIS (April 1999) which recommended as a long-term strategy to construct a median wide enough to allow for future BART extensions.

Proposed Operating Scenario
The BART extension to Pittsburg was assumed to be a one stop extension with 20 minute headways in the peak period and only limited service in the off-peak.

Estimated Costs
Capital: $275 million to $315 million (1998$)
Total Annual Operating Cost: $10,400
Farebox Recovery Assumed: 13%
Net Annual Operating Cost: $9,100 (1999$)

Observations/Issues
- Extending BART easterly will shorten the SR 4 drive and reduce traffic on both SR 4 and local arterials west of the station.
- Constructing BART in the median of SR 4 would reduce costs.
- A new BART stations to the east could provide better bus-rail integration.
- The expected transit demand in the corridor is at the low end for a major rail investment.
- BART extensions involve cost prohibitive freeway widening along the corridor.
- A BART station at Railroad Avenue location is likely to have a significant development potential, primarily for multifamily housing.

Project Title
BART Extension along SR 4 to Hillcrest Avenue in Antioch

Project Description
Extend BART service from proposed station at Railroad Avenue in Pittsburg (or a site near Loveridge Road in Pittsburg) to Hillcrest Avenue in Antioch, a distance of from 4 to 6 miles, along the SR 4 corridor and add one or two stations.

Project Background
- Included in MTC's Regional Rail Reconnaissance and Resolution 1876 (planning).
- Extension Staging Policy.
- Evaluated in a number of BART studies: e.g., Pittsburg-Antioch Corridor Alternatives Analysis/DEIR (August 1988).
- Considered in Route 4 East MIS (April 1999) which recommended as a long-term strategy to construct a median wide enough to allow for future BART extensions.

Proposed Operating Scenario
The BART extension to Antioch was assumed to be over two stops (Pittsburg and Antioch) with 20 minute headways in the peak period and only limited service in the off-peak.

Estimated Costs
Capital: $250 million to $550 million (1998$)
Total Annual Operating Cost: $0.44 million - $0.65 million (1999$)
Farebox Recovery Assumed: 13%
Net Annual Operating Cost: $0.39 million to $0.57 million (1999$)

Observations/Issues
- Extending BART easterly will shorten the SR 4 drive and reduce traffic on both SR 4 and local arterials west of the station.
- Constructing BART in the median of SR 4 would reduce costs.
- A new BART stations to the east could provide better bus-rail integration.
- The expected transit demand in the corridor is at the low end for a major rail investment.
- BART extensions involve cost prohibitive freeway widening along the corridor.
- A BART station at Railroad Avenue location is likely to have a significant development potential, primarily for multifamily housing.
- This project would require future widening of SR 4 beyond the SR 4 improvements contemplated in the Highway 4 East MIS to provide sufficient median width for BART.

Project Title
Ferry Service from Antioch

Project Description
Operate ferry service from Antioch to San Francisco.

Project Background
- Similar to the evaluation of ferry service from Pittsburg to San Francisco contained in the MTC 1992 San Francisco Bay Area Regional Ferry Plan.

Proposed Operating Scenario
Ferry service involves the use of one vessel capable of traveling at least 35 knots. Travel time from Antioch to San Francisco Ferry Building would be about 85 minutes. Service would consist of one AM peak trip for $10 round trip fare.

The Bay Area Council did not propose ferry service from Antioch.

Estimated Costs
Capital: $7 million (1992$)
- $5 -6 million for one vessel
- $1 million for minimal float, shelter, and parking improvements

Total Annual Operating Cost: $580,000
$2,000 daily operating cost (1992$)
Farebox Recovery Assumed: 32% at $10 round trip fare
Net Annual Operating Cost: $185,600
$636 daily operating revenue (1992$)

Observations/Issues
- Initial projections from the 1992 analysis indicate that this service would not reduce overall transit travel times to San Francisco compared to the bus and BART combination, due to the long water route to San Francisco. With one trip there would be little diversion of highway traffic.
- The 1992 analysis also indicated financial performance would be very poor with the anticipated patronage levels.

Project Title
Express Bus Service in SR 4 HOV Lanes (East County to Pittsburg/Bay Point BART Station)

Project Description
Provide peak period commute service from East County to the Pittsburg Bay Point BART Station along SR 4.

Project Background
N/A

Proposed Operating Scenario
Provide peak period service operating on 15-minute headways from East County (Brentwood, Oakley, and Antioch) to the Pittsburg Bay Point BART Station.

Estimated Costs
Capital: $2.8 million (1999$) for buses
Total Annual Operating Cost: $650,000
Farebox Recovery Assumed: 25%
Net Annual Operation Cost: $487,500

Observations/Issues

- By using the HOV lanes on the improved SR 4, this express bus service would compete well with the travel time of the single occupant vehicles and eliminate the time spent looking for parking upon arrival at the BART station.
- Given current parking constraints at the Pittsburg/Bay Point BART Station, the service would provide improved station access.

Project Title
Subscription Bus Service on Vasco Road--Brentwood/Antioch to Tri-Valley

Project Description
Provide 4 daily round trips (until demand increases) to the Tri-Valley area with stops at Livermore Lab, Sandia Lab, and Dublin BART Station. This service would be a subscription service with monthly passes (airline style seats) and daily trips on a space available basis.

Project Background
- Included in the 1998 Regional Transportation (RTP) Track 2.
- ECCTA has been monitoring the need for service along the Vasco Road corridor and with the help of the Labs in the Tri-Valley area are ready for the proposed subscription bus service.

Proposed Operating Scenario
Provide 4 trips AM and 4 trips PM with the driver of the bus employed at a site in the Tri-Valley area. The bus would run the AM service and stay in the Tri-Valley area until the return trip in the PM.

Estimated Costs
Capital: $3 million (1999$)
Total Annual Operating Cost: $192,000 (1999$)
Farebox Recovery Assumed: 100%
Net Annual Operating Cost: N/A

Observations/Issues
- Subscription bus service would serve the major transit markets in the Tri Valley Area with destinations to the Livermore Lab, Sandia Lab and Dublin BART Station.

Project Title
Commuter Rail: Brentwood to Bay Point

Project Description
This commuter rail service could serve as a rail connection to BART. This segment of the extension would use the Union Pacific tracks from Brentwood to Pittsburg and a spur track along the median at Bailey Road to the BART station. This segment would be between 15.7 and 16.9 miles in length depending on the route chosen.

Project Background
- In 1993, Southern Pacific operated commuter rail service between Pittsburg and Brentwood as a demonstration project.
- The Greater East Bay Rail Opportunities Commission further evaluated the service in 1994. This latter study only examined rail service from Solano County through Martinez to Richmond and connection to BART at this location.

Proposed Operating Scenario
Service is anticipated to consist of up to two cars per "train" during the AM and PM peak periods.

Estimated Costs
Capital:
- $40 to $60 million for trackwork (1999$)
- $15 million for vehicles (2 trains, 3 DMUs each) (1999$)

Total Annual Operating Cost: Estimated $2.1 to $2.5 million (1999$) (without Tracy-Brentwood extension)
Farebox Recovery Assumed: 13%
Net Annual Operating Cost: $1.83 million to $2.18 million (1999$)

Observations/Issues
- Commuter rail service would service the communities between Brentwood and Bay Point, providing a transit alternative along the SR 4 corridor.

Project Title
ACE Branch Line: Brentwood to Tracy

Project Description
This commuter rail service would serve as a rapid connection to BART, augmenting local bus service. The rail service extension covers the 21 miles between Tracy and Brentwood on existing Union Pacific tracks. A new station in Byron would be constructed.

Project Background
- In 1993, Southern Pacific operated commuter rail service between Pittsburg and Brentwood as a demonstration project. The Greater East Bay Rail Opportunities Commission further evaluated the service in 1994. This latter study only examined rail service from Solano County through Martinez to Richmond and connection to BART at this location.

Proposed Operating Scenario
Service would originate from the ACE station in Tracy. Service is anticipated to consist of up to two cars per "train" during the AM and PM peak periods. One of the two AM peak trains would provide service to the Pittsburg/Bay Point BART station.

Estimated Costs
Capital:
- $15 million for vehicles (2 trains, 3 DMUs each) (1999$)
- $500,000 for Byron Station (1999$)
- $1.2 million for Byron Siding (1999$)
- $TBD for Trackage Rights

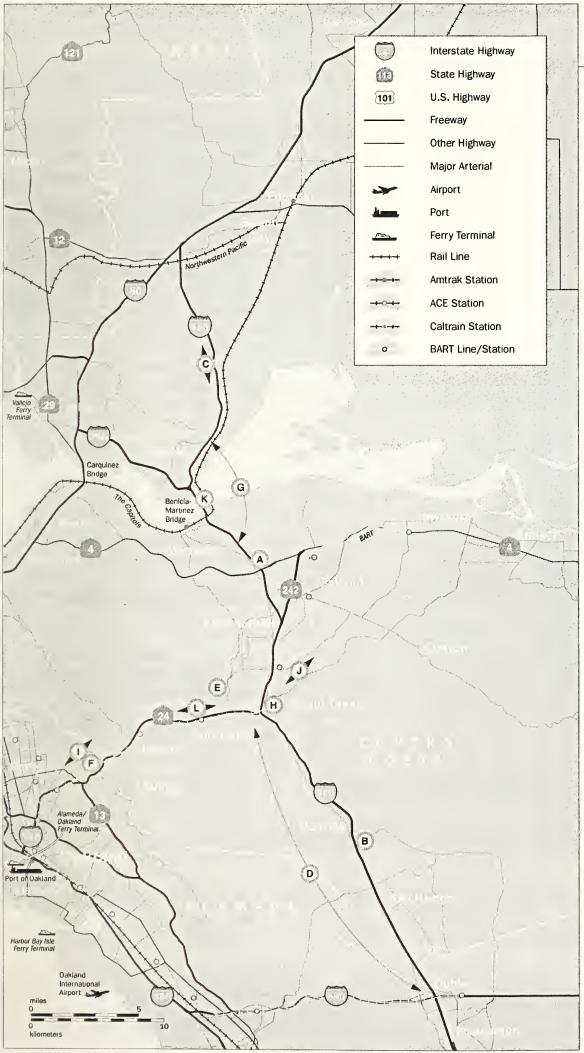
Total Annual Operating Cost: $2.3 million (includes Brentwood to Bay Point) (1999$)
Farebox Recovery Assumed: varies from 15% to 35%
Net Annual Operating Cost: TBD

Observations/Issues
- Union Pacific minimally maintains this unutilized line. Sidings may be required if Union Pacific reintroduces freight traffic back on this line.
- This project would involve sharing costs with ACE.
- Commuter rail service would service the communities between Tracy and Brentwood, providing a transit alternative along the SR 4 corridor.

Section G

Interstate 680 North Corridor

Interstate 680 North Corridor



(A) Interchange Reconstruction — I-680/SR 4

(B) Interchange Improvements — I-680/El Pintado Rd. (+ others not mapped)

(C) Widening of I-680 from Benicia Bridge to I-80

(D) Auxiliary Lanes along I-680 between I-580 and SR 24

(E) Realignment of Taylor Blvd., Pleasant Hill Rd., Geary Rd.

(F) Construction of Caldecott Tunnel Fourth Bore

(G) Express Bus Service — Solano County to Contra Costa County via I-680

(H) Employee Shuttles to and from Walnut Creek BART Station

(I) Subscription Bus Service through Caldecott Tunnel

(J) Enhanced Rapid Bus Service on Ygnacio Valley Rd. and Treat Blvd.

(K) Light Rail on Benicia Bridge

(L) Additional BART Parking in I-680/SR 24 Corridor

Not Mapped:

- Freeway-to-Freeway Connector Improvements:
  - Westbound SR 4 to Southbound SR 242
  - Westbound SR 4 to Southbound I-680
  - Southbound SR 242 to Southbound I-680

Project Title
I-680/SR 4 Interchange Reconstruction

Project Description
Improve configuration and operation of the I-680/SR 4 interchange, short of full reconstruction.

Project Background
- Included in the 1998 Regional Transportation Plan (RTP) Track 2.
- Engineering studies to assess the feasibility of possible incremental improvements to the I-680/SR 4 interchange are programmed in the Contra Costa Transportation Authority 1998 Strategic Plan.
- The study purpose is to define improvements that can be made to the interchange in the near term, short of full reconstruction. It is believed that the operations and level of service can be improved without constructing the "ultimate" full-directional interchange previously identified by Caltrans.
- Operations improvements to I-680 are included in the I-680 HOV lane project.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $275 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The I-680/SR 4 interchange is an older freeway to freeway interchange with poor design for current traffic volumes.
- Ramps and merging lanes are short.
- Improvements would benefit traffic operations on both I-680 and SR 4.

Project Title
I-680 North Interchange Improvements
- El Pintado Road
- Miscellaneous

Project Description
Construct on-ramp to southbound I-680 and off-ramp from northbound I-680 at the I-680/El Pintado interchange, and widen ramps and improve interchange configurations at various interchanges along I-680 where needed.

Project Background
N/A

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $20 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Interchange improvements along I-680 are needed to smooth traffic operations on I-680.

Project Title
Widening of I-680 North to 6 lanes from Benicia Bridge to I-80

Project Description
Add a mixed-flow lane on I-680 in both the northbound and southbound directions (total of 3 lanes in each direction) between the I-680/I-780 interchange (Benicia Bridge) to I-680/I-80 interchange.

Project Background
- Included as an alternative scenario in the I-680/I-80/I-780 Triangle Area Study (1997) (prepared for CCTA by Korve Engineering) to assess the effect of additional capacity on I-680 between the I-680/I-80 interchange and the I-680/I-780 interchange.
- Additional lane was evaluated as a mixed-flow lane, rather than an HOV lane, as the relatively high travel speeds on I-680 would not provide substantial travel time savings to HOV users.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $57.2 million (1999$)
Total Annual Operating Costs: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Improvements to the I-680 northbound to the I-80 eastbound merge should be considered prior to the provision of an additional lane on I-680.
- The widening of I-680 would not adversely affect the operating conditions at the merge or on I-80.

Project Title
Auxiliary Lanes on I-680 between I-580 and SR 24.

Project Description
Construct auxiliary lanes in various locations along I-680 between I-580 and SR 24.

Project Background
- Auxiliary lanes are included in the 1998 Regional Transportation Plan Track 1 between Diablo Road and Bollinger Canyon Road. The Blueprint would accelerate the delivery of this segment.
- Preliminary results from the Central Contra Costa Arterial and Ramp Metering Study indicate that congestion on I-680 south of the I-680/SR 24 interchange will worsen in the future affecting mainline operations up and down the I-680 corridor.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $150 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Auxiliary lanes in various locations would help improve traffic flows along this corridor.

Project Title
Taylor Boulevard, Pleasant Hill Road, Geary Road Realignment

Project Description
Realign Taylor Boulevard, Pleasant Hill Road, and Geary Road as a safety measure to reduce accidents and improve driver safety.

Project Background
- Included in the Contra Costa Transportation Authority 1998 Strategic Plan to ascertain possible realignment scenarios.
- Contra Costa County initiated the preliminary investigation of the intersection. No additional capacity is anticipated at this time.
- Initial fund sources include Measure C and developer fees, local, and federal funds.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $5 million (1999$)
Total Annual Operating Costs: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Realignment will address safety issues at this intersection which connects the Cities of Pleasant Hill and Lafayette and Contra Costa County.
- There have been a number of fatal and other serious accidents at this junction, particularly during the winter months when the weather, lack of visibility and pavement conditions create hazardous conditions.

Project Title
Caldecott Tunnel Fourth Bore

Project Description
Add a fourth bore through the Caldecott Tunnel.

Project Background
- Included in the 1998 Regional Transportation Plan (RTP) Track 2.
- Assemble Bill 2010 introduced by Assemblywoman Lynne Leach in 1998 to request Caltrans to perform a study a new fourth bore for the Caldecott Tunnel died in the Legislature.
- Several written requests were subsequently submitted urging MTC to undertake such a study instead. MTC completed a brief evaluation entitled *Route 24/Caldecott Tunnel Corridor Study Discussion Paper* in 1998.
- In 1999 MTC initiated a corridor study of the entire Route 24 corridor, from Route 24/I-580 junction in Oakland through the Caldecott Tunnel to the Route 24/I-680 interchange in Walnut Creek. The corridor study will analyze the feasibility of a new tunnel bore while also addressing the functions of transit, carpooling, freight, and local streets in the corridor. Study is anticipated to be completed by June 2000.

Proposed Operating Scenario
N/A

Estimated Costs
Capital:
- $104 million (1999$) for 2-lane bore*
- $146 million for 3-lane bore which includes an auxiliary lane*

Total Annual Operating Costs: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

*Preliminary estimates; includes support cost

Observations/Issues
- A new fourth bore would most likely be located to the north of the existing bores and would balance existing lane capacity by providing an equal number of lanes in the westbound and eastbound directions all day long.
- Environmental issues with a new bore include potential impacts on: local traffic and circulation, air quality and freeway noise, native plants and wildlife, and any geologic issues that are different from those encountered with the previous bores.
- Transit and traffic management strategies for the Route 24 Corridor are also being analyzed (see other Blueprint proposals) but have not yet been developed in detail.

Project Title
Express Bus Service - Solano County to Contra Costa County via I-680

Project Description
Increase existing service between the Fairfield/Vacaville area along the I-680 into Contra Costa County and service between Vallejo, Benicia, and Pleasant Hill.

Add park-and-ride and intermodal facilities as a necessary adjunct.

Project Background
- Proposed in Solano Intercity Transit Concept Plan (1995).
- Limited service currently provided by Solano BART Express Route 40.
- Limited service currently provided by Benicia Transit.
- Existing park-and-ride lots include:

  Vallejo:
  Curtola and Lemon Park-and-Ride
  Sereno Bus Transfer Center/Park-and-Ride

  Vacaville:
  Vacaville Regional Transportation Center

  Fairfield:
  Magellan Park-and-Ride
  I-680/Gold Hill Road Park-and-Ride (planned)

- Existing intermodal facilities in Vallejo include Downtown Transfer Center and Intermodal Ferry Terminal.

Proposed Operating Scenario
- The Solano Intercity Transit Concept Plan proposes 20 minute peak period frequency and 7 buses for the peak period Vacaville-Fairfield-Contra Costa County service.
- The Solano Intercity Transit Concept Plan proposes 15 minute peak period frequency and hour midday frequency and 7 buses for the peak period Vallejo-Benicia-Pleasant Hill service.

Estimated Costs
Vacaville-Fairfield-Contra Costa:
Capital: $2.46 million (1999$) (7 buses)
Total Annual Operating Cost: $687,000 (1995$)
Farebox Recovery Assumed: 36%
Net Annual Operating Cost: $437,000

Vallejo-Benicia-Pleasant Hill:
Capital: $2.46 million (1999$)(7 buses)
Total Annual Operating Costs: $884,000 (1995$)
Farebox Recovery Assumed: 48%
Net Annual Operating Costs: $488,000

Capital for park-and-ride and intermodal facilities: TBD

Observations/Issues
- Travel options for commuters would be expanded by upgrading express bus service from Solano County to Contra Costa County.
- Express bus services provide improved travel times compared to local services to workplaces and other destinations.

Project Title
Employee Shuttles to and from Walnut Creek BART Station

Project Description
Operate employee shuttle bus service to and from Walnut BART Station to neighboring employment centers and residential areas.

Project Background
N/A

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $348,000 (1999$)
Total Annual Operating Cost: $17,400 (1999$)
Farebox Recovery Assumed: 0%
Net Annual Operating Cost: $17,400 (1999$)

Assume 10 employees would be involved with one shuttle for each employer, and shuttles would be free.

Observations/Issues
- Employee shuttle buses from the Walnut Creek BART station will serve growing employment centers in Walnut Creek as well as travel from the neighborhoods to nearby employment centers.
- There is potential for "smart" shuttles which could serve multiple origins and destinations as contrasted to a fixed route service.

Project Title
Subscription Bus Service through Caldecott Tunnel

Project Description
Add a new "reverse commute" morning bus service between points in Oakland, Berkeley, and Emeryville and destinations in Central Contra Costa County traveling through the Caldecott Tunnel.

Project Background
N/A

Proposed Operating Scenario
Provide 15 minute peak service.

Estimated Costs
Capital: $3.9 million (1999$)
Total Annual Operating Cost: $0.96 million (1999$)
Farebox Recovery Assumed: 17%
Net Annual Operating Cost: $0.80 million (1999$)

Observations/Issues

- Travel options for commuters are expanded by introducing new subscription bus service through this corridor.
- BART only carries 14% of eastbound trips through the Caldecott Tunnel in the morning due to the dispersed employment sites in Contra Costa County which are difficult to access from BART.
- More targeted subscription bus service through the tunnel to specific employment sites could help relieve traffic demands through the two-lane Tunnel bore in the morning and improve access to jobs, particularly for workers in the San Ramon Valley.

Project Title
Enhanced Rapid Bus Service on Ygnacio Valley Road and Treat Boulevard

Project Description
Enhance rapid bus service on Ygnacio Valley Road and Treat Boulevard.

Project Background
N/A

Proposed Operating Scenario
Proposed rapid bus service would provide service to Walnut Creek and Pleasant Hill BART stations and be expanded as follows:

Route	Peak Headway	Off-Peak Headway
CCCTA 930	10 min.	15 min.
CCCTA 115	10 min.	15 min.

Estimated Costs
Capital: $3.52 million (1999$)
Total Annual Operating Cost: $1.83 million (1999$)
Farebox Recovery Assumed: 27%
Net Annual Operating Cost: $1.53 million (1999$)

Observations/Issues
- Enhanced rapid bus service is intended to more directly serve growing Walnut Creek and Pleasant Hill employment markets along this corridor.
- Increased transit capacity along this congested corridor, particularly with connections to BART stations, will help relieve traffic.

Project Title
Light Rail on the Benicia Bridge

Project Description
The new Benicia Bridge will have the capacity to accommodate a light rail service on the structure.

Project Background
- The Long Range Rail Alignment Report for the I-80 and I-680 Corridors reviewed many of the possible alignments that could be used for light rail service across the Benicia and Carquinez Replacement Bridges.

Proposed Operating Scenario
New Benicia Martinez Bridge – A 9 mile route between North Concord BART station and Benicia at an estimated cost of $380-$640 million.

Estimated Costs
Capital: $380 - $640 million (1999$)
Total Annual Operating Cost: $9.5 million
Farebox Recovery Assumed: 11.5%
Net Annual Operating Cost: $8.6 million

Observations/Issues
- The options for light rail service on the Benicia and Carquinez Bridges have been preserved through Caltrans' design of the two bridges.
- Ridership to justify these rail projects is not expected to develop in the short term.

Project Title
Additional BART parking in the I-680/SR 24 Corridor

Project Description
Provide additional BART parking in the I-680/SR 24 Corridor.

Project Background
- In 1999 MTC initiated a corridor study of the entire Route 24 corridor, from Route 24/I-580 junction in Oakland through the Caldecott Tunnel to the Route 24/I-680 interchange in Walnut Creek. The corridor study will analyze the feasibility of a new tunnel bore while also addressing the functions of transit, carpooling, freight, and local streets in the corridor. Study is anticipated to be completed by June 2000.
- One element of this corridor study is to identify corridor improvement strategies. Some lower cost improvements for additional BART parking include leasing private spaces near the stations, providing BART parking management (e.g., charging for parking or limiting overnight parking to preserve space for commuters when SFO Airport extension is opened), and improving BART station Kiss and Ride access. The higher cost improvement includes double decking BART parking lots.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: TBD
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Providing additional BART parking along this corridor would encourage more BART use by improving auto access.
- Additional parking would also benefit riders who take BART during the shoulders of the peak and currently cannot find parking spaces.
- Parking expansions may not be feasible at some of the stations in the corridor due to cost, visual impacts, and local traffic impacts. Private spaces may not be viable for the same reasons.

Project Title
Freeway-to-Freeway HOV Connector Improvements

Project Description
Includes Freeway-to-Freeway High-Occupancy Vehicle (HOV) direct connectors at the following three potential locations:
- Westbound SR 4 to Southbound SR 242
- Westbound SR 4 to Southbound I-680
- Southbound SR 242 to Southbound I-680

Project Background
- This project is needed to close remaining gaps in the HOV system for I-680 North. Current 1998 Regional Transportation Plan (RTP) Track 1 improvements will add HOVs on SR 4 from Loveridge Road to SR 242, and on I-680 from the Benicia Martinez Bridge to South Main. However, making the connection from SR 4 to I-680 will require that HOVs and express buses weave across the freeway from the left-hand HOV lane to the right-hand exit, causing additional delays to mixed flow traffic, and reducing time savings for HOVs.
- Direct HOV connectors would eliminate weaving and improve time savings for HOVs and express buses, thereby making these modes more attractive than the SOV.

Proposed Operating Scenario
Exclusive left-hand HOV flyovers, similar to the existing HOV connector on Westbound I-80 to the Bay Bridge, would allow HOVs to remain in the left lane, exit left, and come down in the left-hand HOV lane of the connecting facility. This would provide added time-savings for HOVs and express buses.

Estimated Costs
Capital: $75 million (1999$)
(estimated $25 million for each set of direct connectors)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Time savings for HOVs and Express Buses is critical for encouraging commuters to use these modes instead of SOVs.
- The time-savings advantage for commuters using the planned HOVs in Track 1 of the RTP (on SR 4 from Loveridge Road to SR 242, and on I-680 from the B/M Bridge to South Main) could be dramatically improved by providing direct freeway-to-freeway HOV connectors.
- Forecasts indicate that the mixed flow lanes on SR-4 and I-680 will be congested by the year 2020, even with planned improvements. HOV lanes provide an incentive for people to carpool and take transit to avoid that congestion.
- As currently planned, HOVs and express buses trying to weave across the freeway to enter an HOV lane, will add to congestion in the mixed flow lanes, and significantly increase travel time for HOVs. This project offers a way of improving the time-savings for HOVs.

Section H

Interstate 580 Corridor

Interstate 580 Corridor

(A) New HOV Lanes—Tassajara Rd. to Vasco Rd.

(B) Westbound Truck Climbing Lane Through Altamont Pass

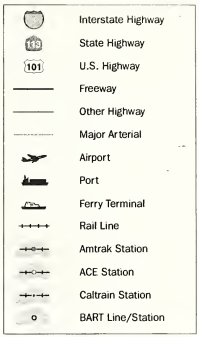
(C) New West Dublin BART Station

(D) BART Extension to Livermore

(E) Enhanced Rapid Bus Service (Stanley Blvd.)

(F) I-238/I-580 Interchange Truck Bypass Lanes

Note: See I-680 South Corridor for ACE Commuter Rail Enhancements



Project Title
I-580 HOV Lanes (Tassajara Rd./Santa Rita Road to Vasco Road)

Project Description
Provide EB and WB HOV lanes from Tassajara Rd./Santa Rita Road to Vasco Road, a distance of 8 miles. Additional right-of-way may be required.

Project Background
- The PSR's being prepared for I-580 interchange improvements will include consideration of HOV lanes.
- Project is included in MTC's 1997 HOV Lane Master Plan Update
- The Tri Valley Transportation Development Fee (TVTDF) program allocates $8 million for the project.

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $40 to $80 million (1998$); will depend on length and relationship to upgrade of interchanges.
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Viability of HOV lanes is based on the following factors: traffic volumes are rapidly increasing and congestion levels mounting; the County's Gateway Policy limits I-580 capacity increases to HOV lanes; and operation of subscription bus services would benefit from HOV lanes especially when these lanes are connected to existing and programmed HOV lanes on I-680.
- Geometric constraints and traffic operational impacts associated with the I-580/I-680 interchange and its approaches would make a direct freeway-to-freeway HOV connection infeasible.
- The project needs a refinement of scope to determine project limits, staging and costs.

Project Title
I-580 (Altamont Pass) Truck Lane

Project Description
Construct a westbound - truck lane from the I-580/I-205 interchange to North Flynn Road at the summit of the Altamont Pass a distance of approximately 6.5 miles

Project Background
- Project was identified in Altamont Interregional Corridor Transportation Study (October 1996).
- Caltrans is currently rescoping a westbound truck bypass lane at the I-580/I-205 interchange ($10 million has been programmed for this project).
- Caltrans is developing a longer-range plan to incrementally construct a westbound truck passing lane from the I-580/I-205 interchange to the Altamont summit (North Flynn Road).

Proposed Operating Scenario
Facility may be on separate right-of-way and used exclusively by trucks

Estimated Costs
Capital: $35 to $50 million (1994$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Current Alameda County policy designating the Altamont as a "gateway" (limit I-580 expansion to HOV and truck lanes only) combined with rapid growth in traffic volumes through the pass support the truck lane concept.
- Design and operational issues include location (on separate right-of-way?) hours of operation?, safety (merging of autos and trucks at end of lane) affects on downstream traffic on I-580 and exclusivity of use (trucks only?)
- An eastbound truck lane from Greenville Road to the summit is a longer-range consideration

Project Title
West Dublin-Pleasanton BART Station

Project Description
Construct a new BART Station on the BART line adjacent to Downtown Dublin, just west of I-680. The project would include a convention center, hotel meeting facilities.

Project Background
- The project is being pursued as a joint public/private venture involving BART, the City of Dublin and a private developer. The financing plan is currently being negotiated.
- Funding ($38 million) was provided in Alameda County's Measure B Reauthorization (Tier 2) November 1998 ballot measure (failed)

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $43 million (1999$)
Tota Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Station would provide improved accessibility to BART for West Dublin/Pleasanton and San Ramon Valley commuters.
- Improved access to BART could increase convenience of using BART as a travel mode in corridor.
- While station would relieve parking pressures on existing East Dublin-Pleasanton BART station, traffic would increase on Dublin arterials accessing the new station.

Project Title
BART Extension to Livermore

Project Description
Extend BART service from East Dublin/Pleasanton station to eastern Livermore along I-580, a distance of approximately 10 miles.

Project Background
- Project is in Phase II of BART Extension Staging Policy
- Project is in MTC Resolution No. 1876 (for planning)
- Project has been evaluated in a number of BART studies: eg., Livermore-Pleasanton Extension Study, Supplemental Analyses (February 1986)
- The preferred alignment was adopted in October 1991

Proposed Operating Scenario
Maintain current headways on Dublin/Pleasanton line of 15 minutes during peak periods. Add two stations east of Dublin/Pleasanton station (sites TBD)

Estimated Costs
Capital: $800 million to $1 billion (1998$)
Total Annual Operating Cost: $995,000 (1999$)
Farebox Recovery Assumed: $866,000 (1999$)
Net Annual Operating Cost: $129,000 (1999$)

Observations/Issues
- Extension will provide BART service for residents and workers in Livermore.
- Extension will provide an alternative to automobiles and assist in reducing congestion on I-580
- Eastern terminus is still uncertain; there is increasing interest in extending the service to connect with ACE in East Livermore to provide a seamless rail connection between the Central Valley and the Bay Region.

Project Title
Enhanced Rapid Bus Service on Stanley Blvd. (Livermore/Pleasanton)

Project Description
Enhance rapid bus service on Stanley Blvd. between downtown Livermore and downtown Pleasanton

Project Background
N/A

Proposed Operating Scenario

Route	Peak Headway	Off-Peak Headway
LAVTAW10	10 min.	15 min.
LAVTAW10A	30 min.	30 min.

Estimated Costs
Capital: TBD
Total Annual Operating Cost: TBD
Farebox Recover Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- Stanley Blvd. is LAVTA's most important trunkline route
- Enhanced rapid bus service will provide an improved transit link between the two largest cities in the Tri-Valley
- Increased transit service will provide an alternative travel option to I-580 and local streets

Project Title
I-238 Truck Bypass Lanes

Project Description
Construct westbound and eastbound truck bypass lanes on I-238 through the I-580/I-238 interchange a distance of approximately one-half mile. Project will require additional right-of-way and may involve significant modification to the existing interchange

Project Background
- Project was included in I-238 Widening Project Study Report (September 1997)
- Bypass lanes constitute Phase III (Long Term) of the I-238 widening project currently being studied
- Design concepts are very preliminary
- I-238 widening (4 to 6 lanes) in the westbound direction is programmed; widening (4 to 6 lanes) in the eastbound direction is included in Track 1 of the RTP

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $82 million (1997$)
Total Annual Operating Costs: N/A
Farebox Recover Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The I-580/I-238 corridor is a major conduit for truck movement between the Central Valley and the Port of Oakland; the I-580/I-238 interchange is a critical bottleneck due in part to discontinuity in lane capacity (8 lanes on I-580, 4 lanes on I-238
- Bypass lanes, combined with planned widening of I-238 to 6 lanes, will assist in reducing congestion at the interchange by separating truck and automobile traffic
- Preliminary design concepts are complex and expensive
- Widening of I-238 to 6 lanes (I-580 to I-880) is an essential first step if the bypass lanes are to be constructed.

Section I

Interstate 680 South Corridor

Interstate 680 South

(A) New I-580/SR 84 Interchange

(B) SR 84 Expressway

(C) I-880/I-680 Cross Connector (alignment TBD)

(D) I-680 HOV Lanes: Contra Costa County Line to SR 84

Not Mapped:

- Sustain and Enhance ACE Service
- Express Bus Service (Tri-Valley to Northern Santa Clara County)
- Expanded Subscription Bus Service (Tri-Valley to Northern Santa Clara County)

	Interstate Highway
113	State Highway
101	U.S. Highway
	Freeway
	Other Highway
	Major Arterial
	Airport
	Port
	Ferry Terminal
	Rail Line
	Amtrak Station
	ACE Station
	Caltrain Station
	BART Line/Station

Project Title
New I-580/SR 84 interchange

Project Description
Construct a new interchange approximately three quarters of a mile east of existing I-580/Airway Boulevard interchange. The Interchange would be built in stages, the ultimate configuration consisting of a 6 lane overcrossing and signalized off ramps. The project includes the removal of ramps at the adjacent Portola Avenue interchange (to the east) and construction of a new roadway connection to North Canyon's Parkway and Portola Avenue on the north side of I-580. The interchange will connect the northerly extension of Isabel Avenue (new SR 84 Expressway) to I-580

Project Background
- A Project Study Report (PSR) has been completed and approved by Caltrans
- TEA-21 provides $9.9 million for the project
- Alameda County Measure B Reauthorization voted on in November 1998, (failed) provided $20 million for the interchange
- No Tri Valley Transportation Development Fees (TVTDF) are currently designated for this project

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $60 million (1998$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This interchange will be required to make the planned SR 84 (Isabel Avenue/Vallecitos Road) 4 to 6 lane expressway function effectively.
- In combination with new SR 84/I-580 interchange, the project will provide bypass of I-580-I-680 interchange and relieve traffic congestion on portions of I-680 and I-580
- Proximity of new interchange to Airway Blvd. may cause operational problems on I-580

Project Title
SR 84 Expressway (I-580/I-680 Bypass)

Project Description
Extend Isabel Avenue north to connect with new interchange at I-580 and widen Isabel Avenue to 6 lanes and Vallecitos Road to 4 lanes to provide a continuous 10 mile expressway between I-580 and I-680. The project will be built incrementally. Currently, Isabel Avenue is being widened to 2 lanes throughout; safety improvements, including passing lanes through Pigeon Pass, will be implemented on Vallecitos Road.

Project Background
- The initial 2 lane widening of Isabel Avenue, with a connection to I-580 at Airway Boulevard, is under construction and will be completed in 2000
- Measure B (1986) is the primary source of funding for this first stage
- The Tri Valley Transportation Development Fee (TVTDF) allocates $24 million in future funds for future stages
- The unsuccessful 1998 Alameda County Measure B Reauthorization ballot provided $70 million for the expressway

Proposed Operating Scenario
- Feasibility of HOV lanes in the long range should be evaluated

Estimated Costs
Capital: $120 million (for 4 lane facility) to $180 million for (6 lane facility)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The project would provide improved access to/from southwest Livermore including the new Ruby Hill development in Pleasanton
- In combination with new SR 84/I-580 interchange, the project will provide bypass of I-580/I-680 interchange and relieve traffic congestion on portions of I-680 and I-580
- Upgraded Isabel Avenue will improve access for trips with origins/destinations in the Isabel corridor

Project Title
I-880/I-680 Cross Connector

Project Description
Provide an improved roadway connection between I-880 and I-680 in Fremont or Milpitas. Connection could be by means of an upgraded existing facility or a new expressway/freeway. Depending on alternative selected project may require improvements to existing freeway interchanges or new interchanges

Project Background

- Caltrans prepared a Project Study Report (PSR) in November 1990. It identified 6 alternatives for further consideration
  - -Jacklin Road
  - -Scott Creek Road
  - - Mission Blvd. (existing alignment SR 262)
  - -Mission Boulevard (new alignment)
  - -Fremont Boulevard
  - -Durham Road
- In March 1998, the Alameda County CMA's consultant study, Mission Boulevard Express Lane Feasibility Study concluded that a 2 lane elevated expressway on Mission Boulevard (UP to I-680) was feasible

Proposed Operating Scenario
N/A

Estimated Costs
Capital: TBD (depends on alignment, capacity, employment of elevated structures, provision of grade separation and need for interchange improvements)

- Initial estimates based on aforementioned studies show a range from $73 million (1998$) (2 lane elevated expressway on Mission) to $350 million (1990$)
  Total Annual Operating Costs: N/A
  Farebox Recovery Assumed: N/A
  Net Annual Operating Costs: N/A

Observations/Issues

- Lack of roadway capacity in the corridor connecting I-680 and I-880 and high volumes of commuter traffic between the Central/Tri Valley areas and Silicon Valley combine to create serious congestion problems on existing arterials
- A number of possible alignments for a connection (e.g. Mission Boulevard and Calaveras Boulevard) run through major commercial - residential areas; there would be a conflict between local traffic and through regional traffic
- None of the alternatives studied to-date have community support
- "High end" alternatives could be prohibitively expensive.

Project Title
I-680 HOV Lanes: Contra Costa County Line to SR 84

Project Description
Widen I-680 from 6 to 8 lanes to provide two HOV lanes, between the Contra Costa County Line and SR 84, a distance of approximately 10 miles. Provide ramp metering and HOV bypass lanes at interchanges as appropriate.

Project Background
- This project is being evaluated in MTC led I-680 Corridor Study Phase 2 MIS.
- This project is consistent with policies of Tri-Valley Transportation Plan/Action Plan for Routes of Regional Significance.

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $26 million (1998$)-depends on required modifications to interchange

Observations/Issues
- This project would close HOV gap on I-680; when combined with existing HOV lanes to the north, and programmed/planned HOV lanes to the south, shared ride modes could travel over an uninterrupted HOV system from Milpitas to Walnut Creek.
- As part of the larger HOV system in the corridor, the project would encourage transit and ridesharing modes and help alleviate congestion in a major commuter corridor.
- Adequacy of interchanges to accommodate additional HOV lanes may prove to be an issue.

Project Title
Sustain and Enhance ACE Service

Project Description
Provide funding to sustain operation of current levels of service (two peak period/peak direction trips between Stockton and San Jose) beyond 2000 and increase service to provide 6 round trips in the peak period/peak directions by 2010

Project Background
- Initial service began in 1998 but only with sufficient funding to operate service through 2000
- Current ridership is 900 to 1200 passengers a day
- San Joaquin, Alameda and Santa Clara counties are sharing current operating costs (approximately $1.3 million per annum per county)
- TEA-21 provides $14 million for infrastructure upgrade and additional train sets
- Alameda County Measure B Reauthorization ballot voted on in November 1998 (failed) provided an operating subsidy of $10 million
- This project is in Track 1 of the RTP and the Blueprint could accelerate project implementation

Proposed Operating Scenario
- Near-term upgrade may include addition of third round trip (between Livermore and San Jose)
- Operate 6 peak period/peak direction round trips with 30 minute headways staging at existing 12 stops by 2010
- ACE is not currently planning to operate trains through the Dumbarton corridor. Any connection to the West Bay would be provided through a transfer to Caltrain service.

Estimated Costs
Capital: $30 to $40 million; would include track and signal upgrade, station improvements and equipment
Total Annual Operating Costs: $6 million to $8 million per year
Farebox Recovery Assumed: $2.14 million (1999$) (26 - 36%)
Net Annual Operating Cost: $3.86 - $5.86

Observations/Issues
- Long-range funding to meet operating cost is an issue
- Additional service (more trains) will require negotiations with UP
- Environmental and capacity constraints on Alviso segment (south of Newark) may jeopardize opportunity to operate additional service in this segment of the corridor
- Speed increases will require substantial upgrade of tracks and signals.

Project Title
Express Bus Service (Tri Valley to Northern Santa Clara County)

Project Description
Introduce express bus service between the Tri Valley and northern Santa Clara County, San Jose and Silicon Valley and enhance existing bus services to/from BART stations

Project Background
- Currently the only bus services provided in the corridor are LAVTA's (Livermore) and SMART's (Stockton) subscription bus services to Lockheed and express bus service to the East Pleasanton/Dublin BART station and Bishop Ranch on I-680

Proposed Operating Scenario
- Conceptually, LAVTA would operate service with 30 minute headways during peak periods and 60 minute headways in off-peaks (more frequent service would be provided to BART).
- Stops would be strategically located to provide connections to park-and-ride lots, the BART station and with key employment centers in Fremont, Milpitas, San Jose and the Silicon Valley

Estimated Costs
Capital: $7.37 million (1999$) (buses)
Total Annual Operating Cost: $6.2 million (1999$)
Farebox Recovery Assumed: $5.2 million (1999$)
Net Annual Operating Cost: $1 million

Observations/Issues
- Increasing commuter traffic on I-680 through the Sunol Grade, with its accompanying congestion, combined with the planned implementation of HOV lanes on I-680 would provide travel time advantages for express buses
- The planning of express bus, subscription bus and rail services would need to be coordinated to ensure complimentary operations
- Bus services will provide a high degree of flexibility in serving employment destinations in northern Santa Clara County

Project Title
Expand VTA Subscription Bus Service: Tri-Valley to Northern Santa Clara County

Project Description
Expand VTA subscription bus service from the Tri-Valley to the major employment centers in northern Santa Clara County.

Project Background
LAVTA currently operates two subscription buses from the Tri-Valley to Lockhead, one to Intel and two from the Pleasanton BART Station to Walnut Creek. The service ("Primetime") is employing refurbished Golden Gate transit buses, the companies provide the drivers and subsidize their employees to use the service. Most of the operating costs are borne by LAVTA.

Proposed Operating Scenario
- The next increment of service involves refurbishing 12 additional buses ($5,000 each to purchase and $40,000 each to refurbish) to operate to destinations in Santa Clara County (IBM, Stanford, etc.)
- Service beyond that described above depends upon ability of LAVTA to afford replacement and additional new buses which may be more expensive than those currently in service due to stricter standards (ADA, air quality, etc.).

Estimated Costs
Capital: TBD (replacement buses will cost $260,000+ at a minimum)
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- Increasing commuter traffic on I-680 and Santa Clara County freeways and expressways with its accompanying congestion combined with the availability of HOV lanes extant and planned would provide travel time advantages for subscription buses.
- Subscription buses have the advantage of providing the most direct type of transit service to the destination end of a commute trip.
- Increasing costs associated with new bus technology may be difficult to fund when current equipment needs replacement.

Section J

Interstate 880 Corridor

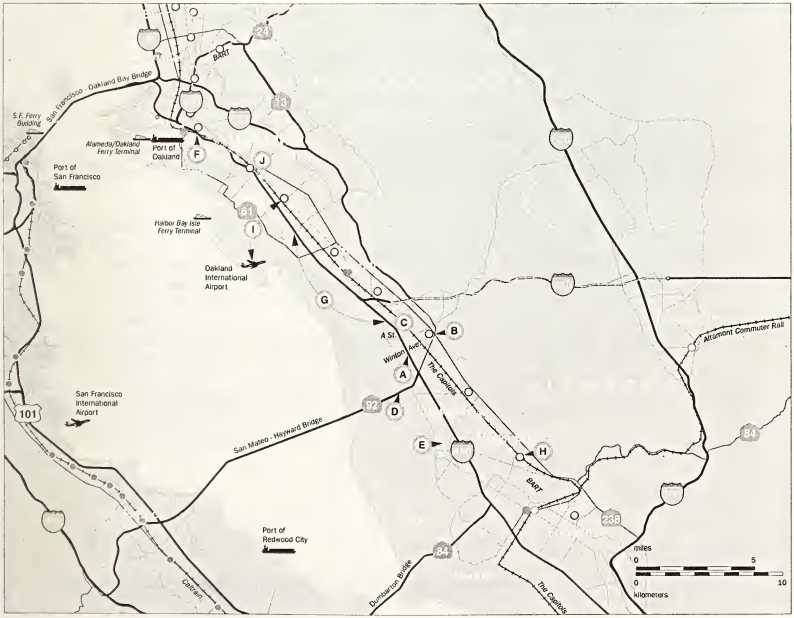
Interstate 880 Corridor

- (A) Interchange Improvements —I-880/Winton Ave.
- (B) Intersection Improvements (Grade Separation)—Mission/Foothill/Jackson
- (C) Interchange Improvements —I-880/A Street
- (D) Interchange and Approach Improvements —SR 92/Clawiter Rd.
- (E) Union Pacific RR Grade Separation on Union City Blvd.
- (F) I-880/Broadway/Jackson Interchange Completion
- (G) I-880 HOV Lanes from Hacienda to 98th Ave.
- (H) Union City Intermodal Station (Phase II)
- (I) Oakland Airport BART Connector

Not Mapped:

- West Oakland Truck Parking Area
- Rapid Bus Service (Berkeley/Oakland/San Leandro Corridor)
- Enhanced Rapid Bus Service (MacArthur Blvd. Corridor in Oakland)

- Interstate Highway
- State Highway
- U.S. Highway
- Freeway
- Other Highway
- Major Arterial
- Airport
- Port
- Ferry Terminal
- Rail Line
- Amtrak Station
- ACE Station
- Caltrain Station
- BART Line/Station



Project Title
I-880 Corridor Interchange Improvements
- I-880/Broadway/Jackson
- I-880/Winton Avenue
- I-880/A Street
- Rte 92/Clawiter Interchange

Project Description
Reconstruct the interchanges to change ramp geometrics, increase capacity and improve mainline freeway operations

Project Background
- The 4 interchanges have significant, long standing operational deficiencies.
- Projects have all been evaluated in Alameda County CMA's I-880 Corridor Study.
- The I-880/Broadway/Jackson interchange project was included on the 1998 Alameda County Measure B Reauthorization ballot (failed) for $6 million; it was partially funded ($47 million) in Track 1 of the 1998 RTP.

Proposed Operating Scenario
N/A

Estimated Costs
Capital:
- I-880/Broadway/Jackson - $6 million (1998$) (represents project shortfall
- I-880 Winton Avenue - $10 million (1998$)
- I-880/A Street - $14 million (1998$)
- Rte 92/Clawiter Avenue - $78 million (1998$)

Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Reconstruction of interchanges will improve vehicle movements through the interchanges and reduce accidents
- Improvements will reduce congestion on adjacent city streets and reduce accident rates

Project Title
Railroad Grade Separation on Union City Boulevard Over UP (Mulford Line) in Union City.

Project Description
Construct an overcrossing of Union City Boulevard over the UP (Mulford Line) crossing between Whipple Avenue and Bettencourt Way in Union City

Project Background
- Project is included in the Alameda County CMA's I-880 Corridor Study project list.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $8.5 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Project is a major at grade crossing of Union City Boulevard at the UP Mulford Line, a major UP freight line and Amtrak rail route; Union City Boulevard is a major reliever route for I-880 and currently experiencing long back-ups of traffic

Project Title
Mission/Foothill/Jackson Grade Separation

Project Description
Elevate Mission Boulevard over a depressed section of Foothill Boulevard/Jackson Street in downtown Hayward. Grade separation could take the form of an urban interchange.

Project Background
- Intersection design solutions were first evaluated in the Mission Foothill Corridor Study (1991) sponsored by the City of Hayward
- The project is included in Alameda County CMA's I-880 Corridor Study project list

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $42 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This interchange represents the convergence of Routes 185, 238 and 92; because of awkward geometrics and difficult signal timing, traffic delays are long and congestion builds up, especially during peak periods; it is one of the most congested intersections in all of Alameda County.
- The project will assist in separating local and regional traffic and improve the operation of both intersections and adjacent arterials.
- Project right-of-way requirements would have adverse impacts on adjacent properties.

Project Title
Extend I-880 HOV lanes, from Hacienda Avenue in Hayward to 98th Avenue in Oakland

Project Description
Extend the existing NB HOV lane approximately 5 miles from the Hacienda overcrossing in Hayward to just south of 98th Avenue in Oakland. Extend the SB HOV lane approximately 2 miles south of Marina Blvd. The NB HOV lane would require major construction at the Lewelling Blvd. on ramp, the I-238 off ramp and replacement of the Washington Blvd. overcrossing. North of Washington Blvd., I-880 would require pavement widening, and replacement of the Marina and Davis Street Bridges and widening of the UP railroad overcrossing at San Leandro Creek

Project Background
- Project is included in the Alameda County CMA's I-880 Corridor Study project list.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $100 million (1999$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- With this project in place, the I-880 HOV system would be over 24 miles in length in both directions and provide continuous operations between Dixon Landing Rd. in Fremont and the Oakland City line.
- The HOV lanes extension will provide additional travel time savings for buses and carpools.
- An extension of the HOV lanes for the north to Cypress would be difficult and costly.

Project Title
Union City Intermodal Station (Phase II)

Project Description
Construct an intermodal transfer facility, with the Union City BART Station as the core, to provide a more direct transfer among the Capitols (if and when Union City becomes a stop), planned VTA Commuter Rail Service and BART. The project would increase parking, station amenities and improvements to local access routes. In addition, the UP rail lines adjacent to the BART station could be relocated and the immediate neighborhood redeveloped as a transit village.

Project Background
- MTC's 1998 RTP provides $9.6 million in Track 1 to complete Phase 1.
- This project has been under consideration for approximately 5 years.
- A Phase 1 project, which includes improving AC Transit bus access to BART, is partially funded and being implemented.
- Alameda County's recent Measure B Reauthorization Expenditure Plan (defeated at the polls in November 1998) designated $9.2 million for this project.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $30 million (1996 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The convergence of BART, the Capitols and future VTA Commuter Rail Service make the existing BART station a prime location for the development of an intermodal station.
- The existence of vacant or underdeveloped land adjacent to the station provides an opportunity to plan and implement land uses that could generate transit patronage.
- Relocating the old SP tracks, which carry the Capitols and are approximately 2,000 ft. to the east of the BART station, to connect more directly to the station is a possibility. However, Union City if not currently a Capitols stop.
- Phase 2 plans are very conceptual at this time and some options could be very expensive.

Project Title
Oakland Airport BART Connector

Project Description
Construct an exclusive transit guideway connecting the BART Oakland Coliseum Station with the Oakland International Airport Terminal, a distance of 3 miles. Two alignments (Hegenberger and Edgewater) are being evaluated

Project Background
- Project was first evaluated in 1970 (Draft EIR/EIS prepared
- It is included in MTC's Resolution No. 1876 (Track II - planning) and BART's Extension Staging Policy (Phase II)
- It was included ($66 million) in Alameda County's Measure B Reauthorization ballot (defeated, 1998
- It has been evaluated in Alameda County CMA's ongoing I-880 Corridor Study
- STIP funding is available for environmental study and preliminary engineering

Proposed Operating Scenario
Operate service between BART Coliseum station and Oakland Airport Terminal, with minimum headways of 4 to 6 minutes during peak periods. (One way in-vehicle travel time of 5 to 7 minutes.)

Estimated Costs
Capital: $130 million (1998$)
Total Annual Operating Costs: $.568 million (1999$)
Farebox Recovery Assumed: $.242 million (1999$)
Net Annual Operating Cost: $.326 million

Observations/Issues
- Project will provide direct rail connection between BART mainline and Oakland Airport Terminal
- It will provide an alternative to the automobile for people accessing the airport, and reduce the need for large scale additional on-site parking facilities
- Service will be more reliable, frequent, greater and more environmentally sensitive than competing modes
- Issues include selection of alignment and potential for intermediate stages

Project Title
West Oakland Truck Parking Area

Project Description
Site and range of services TBD. Suggested sites include one on or adjacent to the Port of Oakland. Besides providing truck parking spaces, services could include a restaurant, over night accommodation, shower facilities, etc.

Project Background
- Alameda County CMA's I-880 Corridor Study has considered a truck stop as a freight managment strategy in the Corridor.
- MTC's Freight Advisory Committee has recommended consideration of the project in the I-880 Corridor Truck Study.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $1 million (1999$) (Cost will depend on site, lot size, ownership [lease or purchase] and range of services provided).
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The parking of truck trailers / containers on residential streets adjacent to the Port of Oakland has become a serious problem.
- A full service truck stop would not only alleviate the aforementioned problem, but provide services for truckers waiting to access the Port.
- Other cities indicating an interest in a truck stop include San Leandro and Union City.

Project Title
Rapid Bus Service in AC Transits' Berkeley/Oakland/San Leandro Corridor

Project Description
Introduce high quality AC Transit bus service in the Berkeley/Oakland/San Leandro Corridor. Potential routes include Telegraph, Shattuck, University and College Aves., E. 14th St. (International Way) and Foothill/Mission Blvd. Project could include high-capacity articulated buses, increased frequencies, improvements to stops, and shelters, Automated Vehicle Locating and Monitoring systems (AVL/AVM), signalization improvements (including preemption), street furniture upgrade, etc.

Project Background
- The AC Transit District Alternative Modes Analysis (AMA) (1992) identified the East 14th Street (International Boulevard) corridor as one of 5 AC Corridors to be considered for incremental upgrade of services; three possible increments of service were defined: high quality bus (Rapid Bus); enhanced trolley bus, and light rail.
- AC Transit is currently undertaking a Major Investment Study (MIS) of the Berkeley/Oakland/San Leandro corridor to determine how best to stage transit improvements.

Proposed Operating Scenario

Route	Peak Headways	Off-Peak Headways
AC40	10 min.	15 min.
AC43	5 min.	15 min.
AC51	10 min.	15 min.
AC82	5 min.	5 min.

Estimated Costs
Capital:
- Telegraph corridor, $15.5 million ($4.5 million for buses) (1998$)
- Foothill/Bancroft corridor, $30.2 million ($8.1 million for buses)
- Broadway/College/University corrdor, $22.3 million ($5.7 million for buses)
- East 14th Street/Mission corridor, $38.4 million ($12.6 million for buses)

Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- The East 14th Street (International Blvd.) corridor is one of AC Transits' primary ridership generators.
- The Berkeley/Oakland/San Leandro corridor is under consideration (MIS) for light rail service in the long range.
- Improvements in transit corridor could foster new development interest.
- Long range service could evolve into electric trolley or light rail.
- Improvements could relieve local traffic congestion.

Project Title
Enhanced Rapid Bus Service in the MacArthur Blvd. Corridor (Oakland)

Project Background
Enhance rapid bus service in the MacArthur Blvd. corridor, including service to Oakland International Airport. Improvements could include high-capacity articulated buses, increased frequencies, improvements in stops, shelters, Automated Vehicle Location and Monitoring Systems (AVL/AVM) signalization improvements (including preemption) street furniture upgrade, etc.

Project Background
N/A

Proposed Operating Scenario

Route	Peak Headways	Off-Peak Headways
AC57	15 min.	15 min.
AC58 (OAK Airport)	15 min	15 min.

Estimated Costs
Capital:
- MacArthur Blvd. corridor, $22.3 million ($6.0 million for buses [1998$]).

Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- Improvements in transit corridor could foster new development interest
- Long range service could evolve into electric trolley or light rail
- Improved service could reduce auto usage and traffic congestion on major city arterials

Section K

Fremont-South Bay Corridor

Fremont-South Bay Corridor

(A) Slip Ramp — I-880/Stevenson Blvd.

(B) Interchange Improvements — I-880/SR 237

(C) I-880 Widening (2 HOV Lanes) — SR 237 to Montague Expwy.

(D) I-880 Widening (2 HOV Lanes) — Montague Expwy. to US 101

(E) BART Extensions
- Fremont to Warm Springs
- Warm Springs to Tasman
- Tasman to Downtown San Jose

(F) Interim VTA Commuter Rail Service—Union City to Downtown San Jose

(G) Expanded VTA Commuter Rail Service—Union City to Downtown San Jose and ultimately to Gilroy

(H) VTA Light Rail Extension—Tasman to Warm Springs, Fremont or Union City BART Station

(I) I-880 Express Bus Service from Fremont BART to Santa Clara County destinations

- Interstate Highway
- State Highway
- U.S. Highway
- Freeway
- Other Highway
- Major Arterial
- Airport
- Port
- Ferry Terminal
- Rail Line
- Amtrak Station
- ACE Station
- Caltrain Station
- BART Line/Station

Project Title
I-880/Stevenson Blvd. Interchange Slip-Ramp for Buses

Project Description
Construct a bus slip-ramp at the I-880/Stevenson Blvd. in Fremont for buses. This ramp would give buses direct access to Stevenson Blvd. and improve bus service to and from the Fremont BART station.

Project Background
- Project scope TBD

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $10 million (1999 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The slip ramp would improve travel times for bus riders traveling to and from the Fremont BART station

Project Title
SR 237/I-880 Interchange Improvements (Stage C-3)

Project Description
Construct a northbound I-880 to westbound SR 237 freeway to freeway connector, with a braided northbound Tasman Drive entrance ramp

Project Background
- Included in the 1998 Regional Transportation Plan (RTP) Track 1. The Blueprint would accelerate the delivery of this project.
- Stage C-3 is the last stage of the SR 237/I-880 interchange improvement project.
- Stages C1 and C2 are already funded.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $60.7 million (1998 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This project will complete the SR 237/I-880 interchange reconstruction, and contribute significantly to the elimination of one of the South Bay's more critical congestion "choke points."

Project Title
Widen I-880 to 8 Lanes (2-HOV) from SR 237 to Montague Expressway

Project Description
Widen I-880 from 6 lanes to 8 lanes by adding a northbound HOV lane and a southbound HOV lane between SR 237 and Montague Expressway, a distance of approximately 1.7 miles.

Project Background
- I-880 currently has 6 mixed flow lanes between Route 237 and Montague Expressway.
- Two related projects are currently programmed:
  - ◊ Widen I-880 to 6 mixed flow lanes and 2 HOV lanes north from SR 237 to the Dixon Landing Rd. interchange
  - ◊ Stages A & B of the I-880/SR 237 interchange reconstruction (southbound I-880 to westbound SR 237 freeway to freeway connector and eastbound SR 237 to northbound I-880 freeway to freeway connector); this project is under construction and will be completed in 2000/01.
- A third project, stages C-1 and C-2 of the interchange reconstruction (southbound I-880 to westbound SR 237 HOV connector and eastbound SR 237 to northbound I-880 HOV connector; and eastbound SR 237 to southbound I-880 freeway-to-freeway connector) is fully funded (Measure A/B).
- The project is consistent with MTC's 1997 HOV Lane Master Plan Update.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $10 million (1999 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Right-of-way acquisition for this project would be minimal. No bridge structure expansions would be required.
- This project will provide a continuous HOV network on I-880 from the Alameda County line to Montague Expressway and facilitate the enhancement of express bus service and HOV use in the corridor.

Project Title
Widen I-880 to 8 Lanes (2-HOV) from Montague Expressway to US 101

Project Description
Widen I-880 to 8 lanes by adding a northbound HOV lane and a southbound HOV lane between Montague Expressway and US 101, a distance of approximately three miles.

Project Background
- I-880 currently has 4 mixed flow lanes between Montague and US 101.
- Funds to widen this segment to 6 mixed flow lanes have been programmed.
- The project is consistent with MTC's 1997 HOV Lane Master Plan Update.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $200 million (1999 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Right-of-way acquisition costs for this segment will be significant due to the proximity of development to the freeway.
- This project will also require the widening of the Coyote Creek/Brokaw Road interchange bridge.
- Adding two HOV lanes to I-880 between SR 237 and Montague Expressway and extending them to US 101, will provide a continuous HOV network on all of the freeways and expressways serving the Golden Triangle area of Milpitas, north San Jose, Santa Clara and Sunnyvale.

Project Title
BART from Fremont to Downtown San Jose

Project Description
Extend BART from Fremont to Downtown San Jose, via Warm Springs using the UP or SP rights-of-way or a combination of both

Project Background
- The Fremont to Warm Springs BART extension was included as part of MTC's original New Rail Starts and Extensions Program (Resolution No. 1876).
- The Fremont-South Bay Study, completed in May 1994, evaluated the potential for BART in the corridor.
- A BART extension to Warm Springs is included in BART's Extension Staging Policy and has been the subject of an EIR.
- Partial funding was included in Alameda County's unsuccessful effort to extend their County's transportation sales tax in November 1998.

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $4.045 billion (1999 $)
Fremont to Warm Springs: $545 million
Warm Springs to Tasman: $750 million
Tasman to San Jose: $2.75 billion
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- The extension would provide a "seamless" rail service linking the East Bay and South Bay, and reduce the number of transfers a rider would have to take in accessing jobs in the corridor; the extension would also help shorten travel times for commuters.
- The project would reduce automobile dependency and freeway congestion.
- A BART extension to San Jose is one of several long term options for rail in the corridor (see other project fact sheets).
- To date, only the BART extension from Fremont to Warm Springs has been given serious consideration.
- The major impediment to implementing a BART extension has been the shortage of funding.
- Other major issues include the selection of alignment, number and location of stations, determination of staging, institutional arrangements between BART and Santa Clara County (outside the BART district) and negotiating with UP to acquire right-of-way and/or lease rights to track usage.
- Near term travel strategies in the corridor are focusing on the proposed VTA commuter rail service and upgraded express bus service.

Project Title
Interim Commuter Rail Service between Union City BART and Downtown San Jose Diridon Station

Project Description
Provide commuter rail service between Union City BART and Downtown San Jose Diridon Station.

Project Background
- Some funds for this project are included in 1998 Regional Transportation Plan (RTP) Track 1. The Blueprint would accelerate the delivery of this project.
- 1996 Santa Clara Measure A/B program provides $89 million to begin basic commuter rail service between Union City and Downtown San Jose.
- Alternative rail scenarios have been studied in the Fremont-South Bay Corridor Study (May 1994) and recently completed VTA Commuter Rail Study (February 1999).

Proposed Operating Scenario
VTA is evaluating service headways; start-up service will provide either half hourly or hourly, two directional service in peak periods.

Estimated Costs
Capital: The capital cost of fully implementing any commuter rail alternatives evaluated in the Commuter Rail Study ranges from $145 million to $170 million (1999 $). (Measure B provides $89 million.)
Total Annual Operating Cost: $6 to $7 million for start-up service; increased service costs TBD.
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- Commuter rail could be either an interim solution (pending a major investment in BART or light rail or a combination of BART/LRT) or a long term solution. The long term commuter rail option is described in the following fact sheet.
- The interim project has a funding shortfall, which is the Blueprint "project."
- Major issues include selection of an alignment (SP, UP or combination), institutional and funding mechanisms (the role of Alameda County), negotiations with UP (right-of-way purchase and/or lease of access rights), and environmental impacts.

Project Title
Expanded Interim VTA Commuter Rail Service

Project Description
Enhance the proposed VTA Commuter Rail Service between Union City and San Jose to extend the service area, and provide more trains and station stops. In the long range, service could ultimately extend south to Gilroy. Trains would operate on the UP line to the Union City BART Station and on the UP/Caltrain line south to Gilroy. Project could include a connecting station with ACE commuter rail service at Niles Canyon in Fremont.

Project Background
- Limited VTA Commuter Rail service between Diridon Station and the Union City BART Station is a Santa Clara County's Measure A/B project. (See preceding fact sheet and VTA Commuter Rail Study, January 1999).
- The MTC led Fremont-South Bay Corridor Study (1994) evaluated a number of BART, LRT and commuter rail alternatives to determine their potentials as major rail service providers in the corridor. Two commuter rail scenarios, using both UP and SP alignments, were studied.

Proposed Operating Scenario (Based on Fremont-South Bay Study)
- Operate two directional, commuter trains between Union City and Diridon Station (or Tamien Station), on UP's eastern alignment, with approximately 8 intermediate stops. Trains would run with 15 minute headways during peak periods and one hour off-peak frequencies.
- Service levels for extension of service south to Gilroy TBD.

Estimated Costs
Capital: $536 million (1994 $) based on Fremont-South Bay Corridor Study.
Includes cost of acquiring UP right-of-way, access and grade separations, stations, tracks, signals and equipment. Does not include costs for extending service south to Gilroy or possible reconfiguration of tracks at major rail junctions (e.g. Niles Canyon "Y").
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- Implementation of the Measure A/B project establishes a commuter rail presence in the corridor.
- Until major issues impeding a BART service in the corridor (lack of funding, institutional arrangements between BART and Santa Clara County, etc.) are resolved, commuter rail service would be the primary rail option.
- An extension southward from Diridon/Tamien Station to Gilroy, combined with major improvements to track interchanges and a new station on the ACE line at Niles Canyon, could provide for direct transfers among VTA commuter rail and LRT services, ACE and Caltrain and tap a large travel market stretching from South Santa Clara County, through the Fremont-South Bay Corridor to the Tri and Central valleys (via transfers).
- Ultimately, it may prove viable to extend rail service south from Gilroy to Hollister in San Benito County and/or to Salinas and/or the City of Monterey in Monterey County (other rail options include Caltrain and the Capitols). However, current ridership estimates to and from these cities indicate that for the present and near term there would be insufficient ridership to justify regular rail service.

Project Title
VTA LRT to BART

Project Description
Extend VTA LRT system north on the UP line to connect with BART at Fremont or Union City. Specific alignment, terminus, number of stations and operating standards to be determined.

Options include:
- Extending LRT from Milpitas (Tasman line) north to Warm Springs, Fremont, or Union City BART stations.
- Extending LRT north from Downtown San Jose (Guadalupe line) to meet a BART extension in Milpitas.

For the purpose of this write-up, it is assumed that LRT would be extended from Tasman LRT to connect with BART at Fremont, a distance of approximately 12 miles.

Project Background
- An LRT connection was evaluated in the Fremont-South Bay Study completed in May 1994, along with BART, commuter rail and express bus alternatives.

Proposed Operating Scenario (Based on Fremont-South Bay Corridor Study)
The LRT scenario (Fremont BART to Tasman) would have stations at Irvington, Warm Springs, S. Warm Springs, Calaveras, and Capital/Montague or Great Mall and would operate with 10 minute peak period headways.

Estimated Costs
Capital: $500 million (Fremont BART to Tasman LRT) (1998 $)
Total Annual Operating Cost: $16 million
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- Linking BART to the VTA LRT system would provide rail access from Alameda County to job opportunities in northern Santa Clara County.
- Major issues include lack of funding, institutional arrangements between Alameda and Santa Clara counties for operating the service and sharing costs, the extent to which grade separations at street crossings would be required, and negotiating with UP for right-of-way acquisition and/or leasing rights to track usage.
- VTA's Measure A/B Commuter Rail Service, Altamont Commuter Express (ACE) and Capitol Corridor services, combined with upgraded express bus service will provide the corridor's primary transit options in the near term.
- As with the other rail options in this corridor, the LRT extension would help reduce automobile dependency and freeway congestion.

Project Title
Expand Express Bus Service: Fremont BART Station to Santa Clara County

Project Description
Expand VTA express bus service from Fremont BART Station to Milpitas (LRT connection) San Jose, Sunnyvale and Lockheed

Project Background
- An expanded express bus service option was studied in both the Fremont-South Bay Corridor Study (1994) and VTA Commuter Rail Study (1998)

Proposed Operating Scenario
- Conceptually VTA would operate express bus service with 15 minute headways during peak periods and 30 to 60 minute headways in off-peak periods

Estimated Costs
Capital: TBD
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD

Observations/Issues
- Increasing levels of commuter traffic on I-880, I-680 and SR 237 and accompanying congestion, combined with existing and planned HOV lanes on I-880 and I-680 would provide travel time advantages for express buses
- The enhancement of express bus service in the corridor must be coordinated with the introduction of commuter rail, and LRT services extant or being implemented to ensure complimentary operations
- Bus service provides a high degree of flexibility in serving employment destinations in northern Santa Clara County

Section L

Santa Clara Valley Subarea

Santa Clara Valley Subarea

(A) SR 85/US 101 HOV Direct Connectors—Mountain View

(B) SR 85/US 101 HOV Direct Connectors—San Jose

(C) I-880/Coleman Ave. Interchange Improvement

(D) Vasona LRT: Campbell (Downtown) to Winchester Station

(E) East Valley LRT: Evergreen Area to Downtown San Jose (alignment TBD)

(F) Caltrain Service Expansion—San Jose to Gilroy

(G) Rapid Transit (Guadalupe LRT) and Caltrain Connections to San Jose Airport

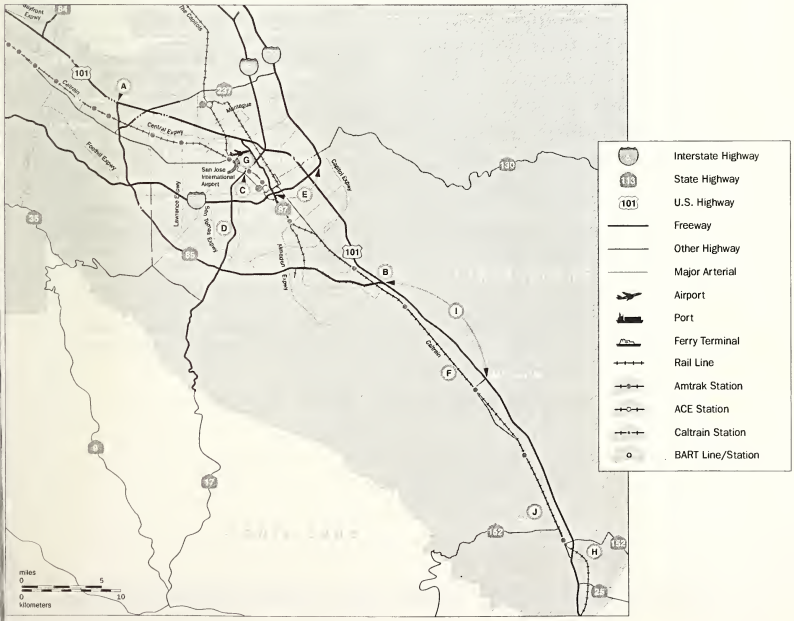
(H) New Alignment for SR 152 (Gilroy Expressway)

(I) US 101 Widening (6 to 8 Lanes) from Bernal Rd. to Cochran Rd. in Morgan Hill

(J) Extension of Santa Teresa Blvd. from Masten Ave. to Bloomfield Ave. in Gilroy

Not Mapped:

- Caltrain Electrification—San Francisco to Gilroy (see Peninsula Corridor)
- Expanded VTA Bus Service
- Montague Expressway Interchange Improvements
- Countywide Freeway Interchange Upgrades
- Countywide Freeway and Expressway Auxiliary Lanes
- Measure A Rail Projects
- Countywide Roadway Connections and Freeway/Creek Overcrossings
- Silicon Valley ITS and SMART Corridor Additions



Project Title
SR 85/US 101 Direct HOV Connectors in Mountain View

Project Description
Construct direct HOV connector ramps from southbound US 101 to southbound SR 85 and northbound SR 85 to northbound US 101.

Project Background
- Project is included in a Project Study Report (PSR) prepared by VTA for the Measure A/B interchange completion project.
- The County of Santa Clara has funded other elements of the interchange project from the Measure A/B program. The HOV direct connectors are not funded.
- The project was initially requested by Caltrans to be included in planning for the reconstruction of the interchange.
- The project is consistent with MTC's 1997 HOV Lane Master Plan Update

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $22 million (1998 $) (These funds represent the amount of additional money required to add the HOV connectors to the original project.)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The traffic operations analysis prepared for the project indicates that the HOV connectors would provide significant operational benefit to the SR 85/US 101 interchange by eliminating weaving movements of vehicles entering and exiting the HOV lanes.
- The project will improve the operation of Santa Clara County's HOV system.

Project Title
SR 85/US 101 Direct High Occupancy Vehicle (HOV) Connectors in South San Jose and Mixed Flow Direct Connector Ramps

Project Description
Construct direct HOV lane connector ramp from northbound US 101 to northbound SR 85 and southbound SR 85 to southbound US 101 and construct direct connector ramps from southbound US 101 to northbound SR 85 and southbound SR 85 to northbound US 101.

Project Background
- Project is included in a Project Study Report (PSR) being prepared by VTA for the Measure A/B interchange completion project.
- The County of Santa Clara Base Case Implementation Plan for the Measure A/B program has $20.6 million included for the interchange. The Blueprint project would provide funds to complete this interchange reconstruction project.
- The project is consistent with MTC's 1997 HOV Lane Master Plan Update.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $25 million (1998 $) These funds represent the amount of additional money required to complete the entire interchange.
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- By providing a direct connection to the existing HOV lanes on Route 85 and US 101, vehicles could travel from Morgan Hill in south Santa Clara County to Redwood City in San Mateo County without exiting the HOV lane.
- The project will improve the operation of Santa Clara County's HOV system.
- The direct connector freeway to freeway ramps will provide access to rapidly developing South San Jose.

Project Title
I-880/Coleman Avenue Interchange Improvements

Project Description
Reconstruct the I-880/Coleman Avenue interchange near San Jose International Airport to improve the ramps and improve access to San Jose Airport.

Project Background
- This project has been identified by the City of San Jose and San Jose Airport staffs as a critical need for improving airport ground access.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $35 million (1998 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Because of design and capacity deficiencies, the existing interchange has serious operational problems which result in significant congestion problems on I-880.

Project Title
Vasona LRT – Downtown Campbell to Winchester Avenue in Campbell

Project Description
Extend the Vasona Light Rail line south from Downtown Campbell to the Winchester Station in Campbell, a distance of approximately 0.5 miles; Project would include extension of tracks and station construction.

Project Background
- Vasona LRT from Downtown San Jose to Downtown Campbell is funded through the County's Measure A/B program.
- VTA is preparing an EIR/EIS for the Vasona LRT project that would extend the Vasona LRT line to the Winchester Station and ultimately extend the line approximately 1.5 miles south from the Downtown Campbell station to Vasona Junction in Los Gatos (depends on funding availability).

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $20 million (1998 $)
Total Annual Operating Cost: $845,000 (1999 $)
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- The Winchester Station extension would provide a more logical "end station" for the Vasona LRT than the Downtown Campbell Station. (The Campbell Station lacks adequate parking to properly function as a commuter, park-and-ride station.)
- The extension will more directly serve the needs of riders in Campbell, Los Gatos and southwestern San Jose and aid in the reduction of commuter traffic on SR 17.

Project Title
Downtown San Jose/East Valley LRT and Rapid Transit Services

Project Description
Provide rapid transit facilities and services connecting the East San Jose/Evergreen area with Downtown San Jose

Project Background
- Santa Clara Valley Transportation Authority (VTA) is currently undertaking a Major Investment Study (MIS) to determine the most appropriate mix of rail and/or bus services in the corridor. (The study area includes Evergreen-Downtown, Capitol and Alum Rock corridors.)
- This corridor was included in the previous Countywide Transportation Plan T-2010 and is included in VTP 2020.

Proposed Operating Scenario
TBD

Estimated Costs
Capital: TBD (MTC's Rail Reconnaissance Survey [March 1999] estimated the cost of a LRT system in the Evergreen-Downtown corridor at $300-$400 million [1998 $])
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- This corridor has the highest level of potential transit ridership in Santa Clara County.
- Transit services will connect East San Jose residential areas with employment/commercial activities in San Jose's downtown and will reduce the impacts of East County growth on Santa Clara County roads.
- Transit services will be coordinated with land use planning to achieve planning goals aimed at intensifying development patterns throughout the corridor.
- Some of the potential LRT alignments have significant right-of-way constraints.

Project Title
Expand Caltrain Service to Gilroy

Project Description
Double track Caltrain from San Jose to Gilroy, a distance of approximately 35 miles. Upgrade station facilities, construct Bailey Road Station, provide additional parking and increase the number of daily weekday round trips.

Project Background
- Included in the 1998 Regional Transportation Plan (RTP)Track 1. The Blueprint would accelerate the delivery of this project.
- Service enhancements are detailed in Caltrain's *Rapid Rail Study* (October 1998).
- Double tracking is included in VTA's planning study of Santa Clara County's Caltrain corridor.

Proposed Operating Scenario
Increase the number of weekday round trips from 4 (peak period/peak direction) to 8 and eventually to 12 round trips

Estimated Costs
Capital: $51.5 million (1999 $)
Total Annual Operating Cost: $9 to $14 million for increased service
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- Upgraded service will improve Caltrain's ability to attract commuters living in South County and working in North County and visa versa; service will provide alternatives to the auto and help address congestion on US 101.
- Opportunities to increase the frequency of service on the UP line south of San Jose will require negotiating with UP to lease access rights to UP tracks for Caltrain use and to develop operating scenarios that permit the sharing of tracks by both freight and passenger trains.
- Ultimately it may prove viable to extend some level of Caltrain service south to Hollister, in San Benito County and/or to Salinas and/or the City of Monterey in Monterey County (other rail options include VTA Commuter Rail Service and the Capitols). Current estimates of ridership to and from these cities indicate that for the present and near term there would be insufficient levels of ridership to justify any rail service.
- See Peninsula Corridor fact sheets for more details on Caltrain service between San Francisco and San Jose.

Project Title
San Jose Airport Transit Connector

Project Description
Provide a transit connection between Guadalupe LRT, San Jose International Airport and Santa Clara Caltrain Station, a distance of approximately 2 miles. Specific technology, alignment and operating strategy to be determined.

Project Background
- San Jose Airport Master Planning efforts include development of a Transportation Access Plan.

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $200 to $300 million (1998 $)
Total Annual Operating Cost: $774,000 (1999 $)
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues
- The transit connector could be a people mover or other technology.
- The project will assist in achieving the airport's goal of accommodating 15% of the airport's ground access by transit by 2005.
- Roles and responsibilities (who would build and who would operate the system) are still under consideration.

Project Title
SR 152 Expressway

Project Description
Upgrade SR 152 to a 4 lane expressway from US 101 in Gilroy to SR 156 at the San Benito County Line, a distance of approximately 10 miles. Upgrade would include curve straightening and some segments on new alignment.

Project Background
- Caltrans completed a DEIR/DEIS in 1994 on an SR 152 expressway project. Alternatives evaluated included upgrades of existing SR 152 from Santa Teresa Blvd. in Gilroy to its junction with SR 156 at the San Benito line and upgrading Santa Teresa Blvd. south to US 101 and then extending the expressway into San Benito County through the SR 25 corridor. Failure to gain political support from the two counties for any of the alternatives evaluated resulted in the project being put on hold.
- Caltrans is reactivating the project.
- The 1998 STIP provides $7 million for an SR 152 corridor study (scope to be determined).

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $300 million (1998 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Issues include selection of an alignment, need for additional right-of-way, and environmental impacts.

Project Title
US 101 Widening, (HOV lanes) Bernal Road in San Jose to from Cochran Road in Morgan Hill

Project Description
Widen US 101 from 6 to 8 lanes to provide northbound and southbound HOV lanes from Bernal Rd. in San Jose to Cochran Road in Morgan Hill

Project Background
- VTA has identified this project as a priority consideration for near term funding.
- The project is consistent with MTC's, 1997 HOV Lane Master Plan Update
- The project to widen this segments of US 101 from 4 to 6 lanes is in Track 1 of the RTP.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $20 million (1999 $)
Total Annual Operating Costs: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- When implemented the project will permit HOV lane users to travel in both directions on US 101 from Cochran Road in Morgan Hill to Redwood City.

Project Title
Santa Teresa Blvd. Extensions

Project Description
Extend Santa Teresa Blvd. north from SR 152 (Hecker Pass Highway) to Fitzgerald Road/Masten Avenue.
Extend Santa Teresa Blvd. south from Castro Valley Road to Bloomfield Avenue/US 101.

Project Background
- Gilroy has identified these gap closures as critical needs.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $40 million (1998 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Project will improve capacity for local traffic and discourage use of parallel US 101 for short distance travel.
- Project will involve both upgrading existing facility and extending it to the north and south.

Project Title
Expand VTA Bus Service

Project Description
Expand bus service throughout Santa Clara County with a focus on the following service areas:

- South San Jose
- East San Jose/Milpitas
- Central San Jose/West County
- South County
- Includes additional express bus service.

Project Background

- Evaluation of service needs and identification of service enhancements is part of VTA's Strategic Plan (1996-2006) and VTP 2020.

Proposed Operating Scenario
TBD

Estimated Costs
Capital: $75 million (1998 $) (for vehicles)
Total Annual Operating Cost: $70 million/year
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: N/A

Observations/Issues

- Improvements will emphasize enhanced service to major transit hubs (Caltrain and BART) and major trip generators (shopping centers, activity areas, etc.).
- Scope of service upgrades is still being determined.
- VTA's Strategic Plan has a goal of increasing the system's farebox recovery rate to 25% over 10 years by adding new riders, increasing the average fare per rider, and reducing VTA's operating cost.

Project Title
Montague Expressway Corridor Improvements

Project Description
This project provides grade separations at key intersections in the Montague Expressway corridor.

Project Background
- Project is being evaluated by VTA.
- 1998 RTP includes $30 million for preliminary engineering and environmental studies associated with improvements to Montague Expressway interchanges.
- Funds for preliminary engineering and environmental work for this project are in Track 1 of the RTP; Blueprint funding would accelerate project implementation.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $300 million (1998 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- The current AM and PM congestion on Montague Expressway will be significantly reduced by the construction of grade separations at key intersections.

Project Title
Countywide Freeway Interchange Upgrades

Project Description
Improve local freeway interchanges in the cities of Campbell, Cupertino, Gilroy, Morgan Hill, Mountain View, San Jose, and Santa Clara

Project Background
- The cities referenced above have identified approximately 27 priority interchange projects involving changes to ramp capacities and operational characteristics.
- These projects are in various stages of design and engineering.

Potential Projects
- SR 17: extend southbound right lane storage at the Hamilton Ave. off ramp - $1 million
- SR 85/ Winchester Blvd.: Convert ½ interchange to full interchange - $10 million
- Lawrence Expressway/I-280 interchange: modify existing ramp - $15 million
- I-280/Wolfe Road interchange: ramp modification - $.25 million
- SR 85/Stevens Creek Blvd.: modify southbound ramp - $.25 million
- I-280/Foothill Blvd. Interchange: modify lanes to mitigate weaving problem, southbound SR 85 to Foothill Blvd. at I-280 - $.03 million
- US 101/Yerba Vista interchange improvements, including large flyover ramp - $25 million
- US 101/Capitol/Yerba Buena: upgrade interchange system - $15 million
- US 101/10th St. interchange improvements in Gilroy - $2.5 million
- US 101/Masten interchange improvements in Gilroy - $5 million
- US 101/Tennant Ave. interchange improvements in Morgan Hill - $4.5 million
- SR 237/El Camino Real/Grant Rd right turn lane from eastbound El Camino Real to southbound Grant Rd. in Mountain View - $6 million
- SR 85/Central Expressway: new ramps - $15 million
- SR 237 loop on-ramp: new on-ramp to SR 237 - $3 million
- US 101/Trimble/De La Cruz interchange improvements and widen De La Cruz Blvd. - $15 million
- US 101/Mabury interchange - construct new partial interchange - $15 million
- US 101/Tully Rd. interchange improvements - $15 million
- US 101/Hellyer interchange improvements and widen Hellyer - $5 million
- US 101/Blossom Hill interchange improvements and widen Blossom Hill Rd. - $10 million
- US 101/Coyote Valley Parkway: new interchange - $20 million
- US 101/Bailey Rd.: new interchange at - $20 million
- I-280 downtown San Jose access improvements, extend 7th St. off-ramp to 3rd St. - $10 million
- I-680/McKee Rd. interchange: realign and signalize northbound off-ramp - $1 million
- I-880/Brokaw interchange improvements - $35 million
- I-880/Stevens Creek interchange improvements - $5 million
- I-280/Saratoga Ave. interchange improvements - $20 million
- US 101/SR 25 interchange improvements - $25 million

Estimated Costs
Capital: $300 million (1999 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Projects will mitigate traffic impacts on local streets, improve freeway access and provide for operational improvements on the freeways and in the interchanges.

Project Title
Countywide Freeway and Expressway Auxiliary Lanes

Project Description
Construct auxiliary lanes between freeway and expressway interchanges

Project Background
- The cities have identified three priority auxiliary projects:
  - SR 237 westbound auxiliary lanes from I-880 interchange to the North 1st Street Exist - $15 million
  - SR 85: add auxiliary lanes from Cottle to SR 87 - $10 million
  - US 101: add auxiliary lanes from Tully Rd. to Bernal Rd. - $10 million
- These projects are in various stages of design and engineering.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $35 million (1999 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Projects intended to help alleviate increasing mainline congestion in freeway or expressway segments with high traffic volumes

Project Title
Measure A Rail Projects

Project Description
- Extend Tasman light rail line facilities and services from Baypointe (just west of North First Street) to Capitol Expressway and Alum Rock Avenue, approximately eight miles.
- Extend light rail line facilities and services 4.8 miles from downtown San Jose to downtown Campbell.
- Construct stations, extend tracks, acquire vehicles, construct parking, and rapid transit facilities and provide services through the County's Measure A/B program.
- Improve Caltrain service and capital facilities within Santa Clara County, including station improvements, track upgrades, rolling stock, operational facilities and supporting equipment.
- Extend commuter rail-type service from Downtown San Jose to Union City in Alameda County using conventional diesel rail technology on existing Union Pacific alignments.

Project Background
- Included in the 1998 Regional Transportation Plan (RTP) Track 1. The Blueprint would accelerate the delivery of these projects.
- These projects are consistent with VTA's Strategic Plan, based on the vision and mission statements adopted by the VTA Board in 1995, VTA's Short Range Transit Plan, and VTP 2020.

Proposed Operating Scenario
Service is expected to be comparable in frequency and capacity to that of the existing light rail and Caltrain services, except that the Fremont-South Bay Corridor service will initially be provided during the peak hours only.

Estimated Costs
Capital: $864 million (1999 $)
Net Annual Operating Costs: increase from $0.8 million/year (1999 $) in 2000-2001 to $22.4 million/year (1999 $) in 2004-2005 as light rail extension projects are completed and come on line.
Total Annual Operating Cost Through 2018: $336 million (1999 $)
Farebox Recovery Assumed: 14% to 18%
Net Annual Operating Cost through 2018: $278 million (1999 $)

VTA's Strategic Plan has a goal of increasing the system's fare box recovery rate to 25% over 10 years by adding new riders, increasing the average fare per rider and reducing VTA's operating cost.

Observations/Issues
- Expanded rail service will improve VTA's ability to provide alternatives to the auto and help address roadway congestion.
- Rail services will connect residential areas with employment and commercial activities in San Jose's downtown and will reduce the impacts of county growth on congested roads.
- Rail services will be coordinated with land use planning to achieve planning goals aimed at intensifying development patterns throughout the corridor.
- Rail improvements will emphasize enhanced service to major transit hubs (Caltrain and BART) and major trip generators (shopping centers, activity areas, etc.).

Project Title
Countywide Roadway Connections and Freeway/Creek Overcrossings

Project Description
Construct the following roadway connections and freeway/creek crossings to enhance the connectivity of the existing roadway system:

- US 101 overcrossing at Cohansey and Cohansey Extension - $3.5 million
- US 101 overcrossing at Mesa Road - $2.5 million
- US 101/Tennant intersection - $4.5 million
- Charcot Ave. at I-880: new 4-lane overcrossing - $30 million
- Zanker Road at 4th Street and US 101: new 4-lane overcrossing and interchange - $25 million
- Branham Lane at US 101: new 4-lane overcrossing - $15 million

Project Background

- Projects will be prioritized in the VTA 2020 process.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $80.5 million (1999 $)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues

- Many of these projects are at the conceptual level and require further scope development.

Project Title
Silicon Valley ITS System and SMART Corridor Additions

Project Description
This project would implement a fully functional Traffic Management Center in San Jose to coordinate countywide ITS and SMART corridor operations and with VTA's light rail system. It also provides for upgrading all traffic signals in the County, installing fiber optics, video detection, dynamic message signs, closed circuit television cameras, extinguishable message signs, on-street traffic sensors and data collection stations.

Project Background
- This project is a continuation of ongoing efforts in Santa Clara County to provide Intelligent Transportation System (ITS) elements.
- Some funds for this project are in Track 1 of the RTP and the Blueprint would accelerate project implementation.

Proposed Operating Scenario
The system will be operated and maintained by local cities and the County.

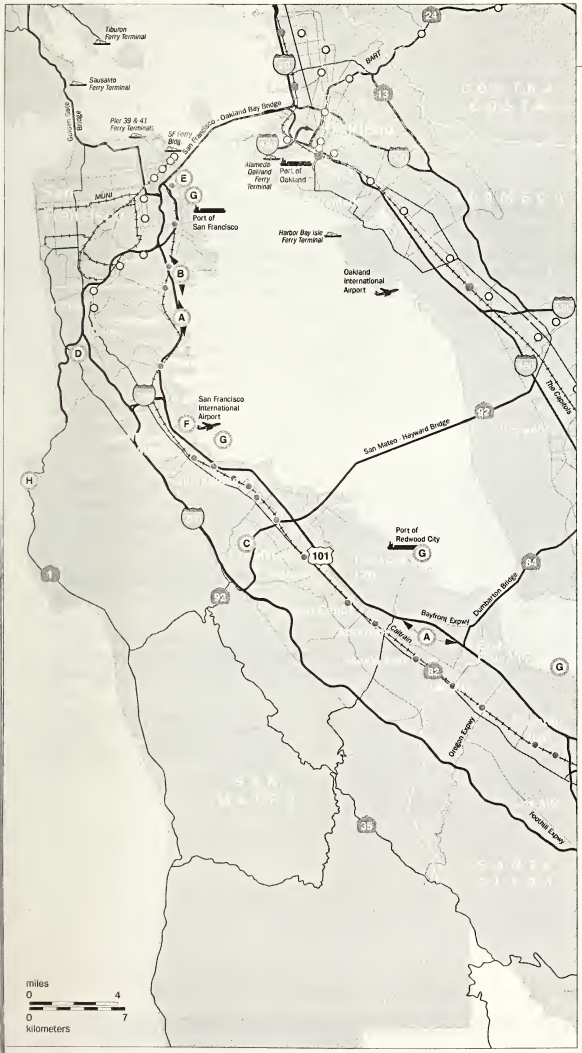
Estimated Costs
Capital: $100 million (1998 $)
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- ITS and SMART Corridor strategies (incident management, message signs, electronic traffic monitoring devises, signal interconnections, etc.) are currently enabling the County and its cities to better manage traffic.

Section M

Peninsula Corridor

Peninsula Corridor



(A) US 101 Auxiliary Lanes

(B) US 101 Interchange Modifications

(C) Widen Route 92 between US 101 and I-280 from 4 to 6 lanes

(D) Improve Connection from Eastbound Route 1 to Southbound I-280 and Serramonte Boulevard

(E) Caltrain San Francisco Downtown Extension

(F) Airport Light Rail System (ARLS) Connection to Caltrain

(G) New Peninsula Corridor Ferry Services (Terminal Locations)

(H) Devil's Slide Tunnel

Not Mapped:

- Caltrain Grade Separations
- Enhanced Express Bus Service
- Caltrain Electrification
- Caltrain Mass Transit Service (All Day, More Frequent Service)
- Caltrain Rapid Rail Improvements

Interstate Highway
State Highway
U.S. Highway
Freeway
Other Highway
Major Arterial
Airport
Port
Ferry Terminal
Rail Line
Amtrak Station
ACE Station
Caltrain Station
BART Line/Station

Project Title
US 101 Auxiliary Lanes

Project Description
Construct northbound and southbound auxiliary lanes along US 101 at key locations.

Project Background
- San Mateo County's 1988 sales tax expenditure plan identified US 101 auxiliary lane improvements totaling an estimated $188 million (1988$).
- US 101 auxiliary lanes at the Oyster Point interchange and between E. Third St. and Route 92 have been completed; projects between San Bruno and Millbrae Avenues (adjacent to SFO) and between Marsh Rd and SR 92 are programmed or under construction.
- Remaining US 101 auxiliary lane priorities are south of Marsh Rd, to the Santa Clara County line and north of 3rd Avenue to Millbrae Avenue and north of San Bruno Avenue to the San Francisco County line.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $50 million (1998$) in regional funding needed to complete the Strategic Plan
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- MTC recently completed a San Mateo US 101 Operational Analysis and found that auxiliary lanes were the most effective traffic relief project given the physical constraints to adding new lanes.
- The MTC analysis found that auxiliary lanes, combined with ramp metering can be an effective means of eliminating key bottleneck locations.
- Any significant additional corridor capacity will need to be provided by mass transit.

Project Title
US 101 Interchange Modifications

Project Description
Modify older interchanges and improve ramp connections along US 101 at key locations.

Project Background
- San Mateo County's 1988 sales tax expenditure plan identified US 101 interchange modification projects totaling an estimated $300 million (1988$).
- San Mateo County Transportation Authority (SMCTA) has funded interchange improvements at Oyster Point and March Road; new ramps were added at Brittan Road.
- The SMCTA Strategic Plan also includes additional interchange modifications beyond RTP Track 1 at Candlestick and Broadway.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $53 million (1998$) in regional funding needed to complete the Strategic Plan
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Interchange modifications will provide improved access to land uses previously not served.
- The MTC analysis found that auxiliary lanes, combined with ramp metering can be an effective means of eliminating key bottleneck locations.
- Any significant additional corridor capacity will need to be provided by mass transit.

Project Title
Widen Route 92 between US 101 and I-280 from 4 to 6 lanes

Project Description
Route 92 is currently 2 lanes in each direction between US 101 and I-280. Route 92 between US 101 and San Mateo Bridge was widened to 3 lanes in each direction a few years ago with Regional Measure 1 funds.

Project Background
- Identified in Sam Mateo County's Sales Tax Expenditure Plan.
- Route 92 is or will be widened to 3 lanes in each direction from the I-880/92 interchange in Alameda County to US 101/92 in San Mateo County.
- New widening projects, including widening of the San Mateo Bridge, are being funded by Regional Measure 1 bridge tolls

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $100 million (SMCTA Strategic Plan)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This project would provide lane continuity between I-280 in San Mateo County and I-880 in Alameda County.
- It would also provide alternative access from I-280 to Route 92 to US 101, thus bypassing congested parts of US 101 through Central San Mateo County
- An extra lane is most needed in westbound (uphill direction) due to slower vehicles traveling up a steep grade.
- This project would serve the growing Route 92 commute market from the coast.

Project Title
Improve connection from eastbound Route 1 to southbound I-280 and Serramonte Boulevard.

Project Description
The eastbound Route 1 to southbound I-280 connector is a short radius curve the leads to a very short auxiliary lane for traffic accessing I-280 or exiting at Serramonte Boulevard. The proposed solution would be to separate traffic getting on eastbound I-280 from traffic exiting to Serramonte Boulevard

Project Background
- Identified in Sam Mateo County's Sales Tax Expenditure Plan.
- Proximity of Rte.1/I-280 interchange and I-280/Serramonte interchange is substandard.

Proposed Operating Scenario
N/A

Estimated Costs
(from Bay Area Council Report)
Capital:
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- This project is designed to improve weaving on I-280, which creates safety and congestion problems.
- It would serve Serramonte, which is a large and growing retail area.

Project Title
Caltrain San Francisco Downtown Extension

Project Description
Extend Caltrain service from current San Francisco terminus at 4th and Townsend Streets 1.5 miles to an underground or above-ground station at the Transbay Terminal site.

Project Background
- Included in MTC's existing New Rail Starts and Extensions Program (Resolution No. 1876).
- Lack of sufficient local financial commitment has stalled project over a number of years.
- Most recent effort was completion of DTX Draft DTX DEIR in March 1997.
- The Peninsula Joint Powers Board (JPB) subsequently re-directed efforts on its Caltrain Rapid Rail Plan, which focused on system maintenance and upgrades.
- San Francisco has renewed interest in the project as part of a new/rebuilt Transbay Terminal.
- MTC study currently evaluating potential Caltrain and other rail connections at Transbay Terminal site.
- MTC staff currently looking at potential terminal configurations.

Proposed Operating Scenario
The Caltrain Downtown Extension Draft Environmental Impact Statement/Report (DTX DEIR) assumed a maximum 86 weekday train schedule for travel demand forecasting and financial estimating purposes. The proposed 6-track terminal was determined to more than sufficient to accommodate future operating scenarios.

Estimated Costs (from 1997 Downtown Extension DEIS/DEIR)
- Capital: $700 million (1996$)
- Total Annual Operating Cost (S.F. operating increment for 86 weekday train schedule in 1996$): $7.9 million
- Farebox Recovery Assumed: Greater than 100% for operating increment
- Net Annual Operating Cost: : $7.1 million surplus

Observations/Issues
- San Francisco now views the Caltrain extension/Transbay Terminal site as key to linking important rail (Caltrain, intercity, HSR) and bus services
- Caltrain service is seen as an important linkage to South-of-Market development, including PacBell Stadium and Mission Bay.
- A downtown station would also serve a redevelopment area around Transbay Terminal.
- The downtown extension better serve a growing reverse commute from S.F. to San Mateo/Santa Clara Counties.
- Electrification would be needed for at least the undergound subway portion in San Francisco.

Project Title
Airport Light Rail System (ALRS) Connection to Caltrain

Project Description
The Airport ALRS would extend the existing system under construction (between the Ground Transportation Center and the main terminals and the United Airlines Maintenance Facility) across US 101 and connect to the re-located San Bruno Caltrain station just north of I-380.

Project Background
- SFO is currently implementing its $2 billion Master Plan, which includes expanded and new terminals, a Ground Transportation Center and an ARLS to provide internal Airport circulation.
- Current planned SFO Caltrain access will be via a BART shuttle from the Millbrae intermodal station.
- The Caltrain Rapid Rail Study (1998) recommended that the ALRS be considered once the SFO Master Plan expansion has been completed.
- The JPB commissioned a 1996 study of potential Caltrain/ALRS connections in its Caltrain-SFO Light Rail System Connection Feasibility Study. The JPB recommended two Caltrain connection alternatives: 1) via I-380 as described above (Alternative 3B), and 2) directly across from the main terminals (Alternative 5).
- In 1998, the San Mateo County Transportation Authority (SMCTA) passed a resolution supporting a direct Caltrain/SFO rail connection as a high priority. The San Francisco, San Mateo and Santa Clara Boards of Supervisors passed similar resolutions.

Proposed Operating Scenario
Inbound and outbound ALRS tracks to Caltrain would branch off just north of the United Airlines Maintenance Facility (UAL). Inbound trains would travel from Caltrain to the main SFO terminals in a counterclockwise direction, then out again toward the UAL, across US 101, then back to the Caltrain station.

Peak-hour ALRS headways would be 2 minutes and 12 to 15 minutes during off-peak Caltrain service hours.

Estimated Costs
(from 1992 Electrification Study)
Capital: $120 million (1998$) - SMCTA has allocated $60 million to the project
Total Annual Operating Cost: $6.01 million
Farebox Recovery Assumed: No Fare Proposed
Net Annual Operating Cost: N/A

Observations/Issues
- Without the ALRS, Caltrain passengers traveling to SFO could be required to transfer twice (to BART and the ALRS), depending on their final destination.
- ALRS at San Bruno would provide convenient access to jobs at UAL.
- SFO believes that ALRS connection would may not be cost effective given the SFO/BART connection at Millbrae, which is currently under construction.
- Since alignment is mostly off-SFO property, Airport funds cannot be legally used for the project.

Project Title
New Peninsula Corridor Ferry Services

Project Description
Various ferry services have been proposed to serve locations along the Peninsula waterfront. The basic ferry routes include:

- Redwood City/Mission Bay/S.F. Ferry Terminal
- Moffett Field/Mission Bay/S.F. Ferry Terminal
- S.F. International Airport (SFO)/S.F. Ferry Terminal
- SFO/Moffett Field

Project Background

- MTC first adopted a Regional Ferry Plan in 1992. The plan examined 17 potential new ferry service routes, including Redwood City/SF, SFO/SF and SFO/Moffett Field. These routes were not recommended due to low projected ridership and high implementation costs
- MTC's recent Regional Ferry Plan Update (March 1999) focused mostly on short-term improvements for existing or recommended ferry services. Recommendations for land-side improvements to the S.F. Ferry Terminal would benefit several of the proposed Peninsula ferry services
- The Bay Area Council's Blue Ribbon Task Force recommended an expansive regional ferry system in its February 1999 report, which included the introduction of new Peninsula ferry service
- The Port of Redwood City has created a "Fact Finding Panel" to consider ferry service opportunities. East Bay and San Francisco are considered the two most significant service areas from Redwood City
- The City of South San Francisco and the Harbor District have created a panel to investigate and promote ferry service from the Oyster Point Marina.

Proposed Operating Scenario

Routes/Stops	Peak Headway	Off-Peak Headway
Redwood City/Mission Bay/S.F. Ferry Terminal	30 min.	60 min
Moffett Field/Mission Bay/S.F. Ferry Terminal	30 min.	60 min
S.F. International Airport (SFO)/S.F. Ferry Terminal	20 min.	60 min.
SFO/Moffett Field	30 min.	60 min.

Estimated Costs
(from Bay Area Council Report)

Capital:

Routes/Stops	Cost (millions)*
Redwood City/Mission Bay/S.F. Ferry Terminal	$18.7
Moffett Field/Mission Bay/S.F. Ferry Terminal	$24.7
S.F. International Airport (SFO)/S.F. Ferry Terminal	$21.0
SFO/Moffett Field	$28.0

* Includes feeder bus costs

Total Annual Operating Cost:

Routes/Stops	Total Costs	Net Cost	Farebox
Redwood City/Mission Bay/S.F. Ferry Terminal	$8.0	$5.4	32%
Moffett Field/Mission Bay/S.F. Ferry Terminal	$10.3	$8.0	25%
S.F. International Airport (SFO)/S.F. Ferry Terminal	$8.1	$11.4	141%
SFO/Moffett Field	$9.0	$2.4	73%

* Includes feeder bus costs
** in millions

Observations/Issues

- Much of the Peninsula's new and planned office space is on the east side of US 101. Proposed ferry terminals could potentially serve these developments.
- Ferry service would require extensive feeder bus service to be effective because most rider destinations would be removed from the immediate terminal area.
- Land side access at Moffett Field may impact environmentally sensitive areas.
- Port of Redwood City and South San Francisco support some level of ferry service to their respective jurisdictions.
- Due to inaccessibility and access issues, ferry service will not be able to effectively serve the high employment markets in Silicon Valley.

Project Title
Devil's Slide Tunnel

Project Description
Construct inland tunnel that bypasses current coastal alignment that is subject to periodic closures due to slides/slipouts

Project Background
- Included in the 1998 Regional Transportation Plan (RTP) Track 1. The Blueprint would accelerate the delivery of this project.
- Plans for an inland surface bypass first developed back in early 1960s
- Lack of funding and various lawsuits opposing the bypass have stalled the project
- San Mateo County voters overwhelmingly passed a November 1996 initiative that called for the Devil's Slide area be bypassed by a two-lane tunnel
- Caltrans has recently completed the tunnel's draft environmental analysis; the final analysis will be completed by February 2000

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $144 million (1999$) (project included in RTP)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Project included in 1998 RTP, but included in Blueprint to consider acceleration if new funding available
- TEA-21 included a $1.1 million earmark plus authorization to receive continuously appropriated California emergency relief funding

Project Title
Caltrain Grade Separations

Project Description
The Caltrain Rapid Rail Study recommends construction of 14 grade separation projects, which include 21 separate grade crossings. Six projects are in Santa Clara County with the remaining 8 projects are in San Mateo County.

Project Background
- The Caltrain line has 52 at-grade vehicular crossings and 69 grade-separated crossings between the 4th and Townsend station in San Francisco and the Tamien station in San Jose (owned by the JPB); another 36 at-grade crossings and 14 grade-separate crossings are between Tamien and Gilroy (owned by Union Pacific).
- The San Mateo County Sales Tax Expenditure Plan includes funding for grade separations in the County; to date, 6 have been complete and another 3 are under construction.

Proposed Operating Scenario
N/A

Estimated Costs
(from 1998 Caltrain Rapid Rail Program)
Capital: $590 million
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Grade separations largely improve traffic circulation, but also provide some improvement to train safety and reliability
- Grade separations have proven to be costly to implement, with costs exceeding $20 - 25 million per separation.
- Grade separations will lessen expected increased traffic conflicts due to planned expanded train service and traffic growth
- Grade separations will help simplify planned Caltrain electrification
- Grade separations have not gained widespread support on the Peninsula due to high cost and perceived impacts to local land use

Project Title
Enhanced Express Bus Service

Project Description
Expand express bus service throughout the Peninsula to improve the following service areas:

- South San Mateo/northern Santa Clara County to Millbrae BART
- Redwood City to Palo Alto/Sunnyvale
- Central San Mateo County to Millbrae BART
- "Rapid Bus" improvements along El Camino

Project Background

- SamTrans currently operates a number of express bus routes in the corridor, serving mainly south San Mateo residents working in downtown San Francisco.
- Santa Clara VTA also provides some express bus service, mainly serving the Santa Clara Subarea Corridor; VTA also provides several local bus routes that connect with SamTrans' express bus routes to San Francisco.
- Santa Clara VTA will be assessing FTA-designated "Rapid Bus Routes", which will assess potential for high-frequency/high-capacity bus routes along the El Camino Real corridor.
- SamTrans is currently undergoing several changes as a result of a systemwide assessment and in anticipation of BART Colma and SFO extensions.

Proposed Operating Scenario

Routes/Stops*	Peak Headway	Off-Peak Headway
SamTrans 1F, 7F, 16F and 17F	15 min.	15-60 min
New Service Redwood City/Lockheed and Palo Alto	15 min.	60 min
SamTrans 41F, 47F, 48F, 49F	15 min.	60 min.
New Service San Mateo/Coma and Palo Alto	15 min.	60 min.
SamTrans 5M, 5L and 7B	15 min.	15 min.
SamTrans 90H	30 min	30 min

* Old route number designation

Estimated Costs
Capital: $31.3 million (1999$)
Total Annual Operating Cost: $18.0 million (1999$)
Farebox recovery assumed: 28%
Net Annual Operating Cost :$12.9 million (1999$)

Observations/Issues

- Bus improvements are intended to better serve growing Silicon Valley employment markets and existing San Francisco employment markets.
- Bus service provides more flexibility in serving growing employment centers east of US 101.
- Express bus system is compatible with existing or planned rail improvements.
- Added bus service could improve reliability.

Project Title
Caltrain Electrification

Project Description
Electrify the Caltrain system from Gilroy to San Francisco. Includes purchase of 23 electric locomotives.

Project Background
- Feasibility Study for Electrifying the Caltrain/PCS Railroad (October 1992) found that a 25kV AC system with catenary and electric locomotives pulling existing gallery cars would be most cost-effective way to electrify.
- Electrified Caltrain was evaluated as part of the Caltrain San Francisco Downtown Extension Draft EIR/EIS (March 1997).
- The JPB has identified electrification as a priority Caltrain project as part of its decisions on the recently completed Rapid Rail Study (October 1998).

Proposed Operating Scenario
The Caltrain Downtown Extension Draft Environmental Impact Statement/Report (DTX DEIR) assumed an 86 weekday train schedule for travel demand forecasting and financial estimating purposes; however, ther is not specfic weekday schedule for the electrification project.

Estimated Costs
Capital: $375 million (1997$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost (S.F. operating increment for 86 weekday train schedule in 1996$): $7.4 million in additional operating costs at existing service levels

Observations/Issues
- Higher performance of electric trains is viewed as a way to improve operating flexibility, operating speeds and reduce travel times.
- Electrification will cost about $7.4 million more annually to operate than diesel trains at existing service levels, which would require additional Caltrain operating subsidy.
- Electrification is viewed as a "good neighbor" policy due to reduced noise and improved air quality benefits.
- Electrification operating costs break-even with diesel service operating costs at a 114 weekday train schedule according to the Rapid Rail Study.

Project Title
Caltrain mass transit service (all day, more frequent service)

Project Description
Caltrain service would be expanded in conjunction with the downtown extension to Transbay Terminal and an electrified line between Gilroy and downtown San Francisco. Weekday train service would be expanded to about 158 trains per day.

Project Background
- Caltrain skip stop service was evaluated as an alternative of the Peninsula Mass Transit Study (March 1985).
- Electrified mass transit service was again evaluated as part of the Feasibility Study for Electrifying the Caltrain/PCS Railroad (October 1992).
- The Caltrain 20-Year Strategic Plan (1997 - 2017) envisions a maximum 106 train schedule, which provide some additional peak-hour service and 30 minute off-peak headways.

Proposed Operating Scenario
Peak period trains would operate as two lines that alternatively stop at every second station (sometimes called skip stop service), offering peak-hour frequencies to downtown San Francisco of approximately 5 to 7 minutes and off-peak service frequencies of 10 to 15 minutes. Key stations, including San Jose, Lawrence, Mountain View, Palo Alto, Hillsdale, Millbrae, 4th/Townsend, Transbay Terminal, would be served by both lines.

Estimated Costs
(from 1992 Electrification Study)
Capital: $36 million (1992$) for 8 additional electric locomotives
Total Annual Operating Cost: $47 million (1992$) additional compared to 66 train diesel service
Farebox Recovery Assumed: 43%
Net Annual Operating Cost: $20 million

Observations/Issues
- At higher levels of service, grade separations of local streets and Caltrain tracks becomes important to avoid traffic delays.
- Some cities have constructed or will construct grade separations to improve vehicular traffic flows. Other cities have withdrawn their proposed projects over concerns that grade separations will disrupt local land uses.
- Grade separations are intended to primarily improve local street circulation, but will also increase train reliability.
- The grade separation program is funded roughly 50% with local sales tax funds, with the remainder coming from state, federal or regional sources.

Project Title
Caltrain Rapid Rail Improvements

Project Description
There are several capital projects identified in the Caltrain Rapid Rail Study that would support more frequent, faster and flexible service beyond upgrades included in the 1998 Regional Transportation Plan (RTP). These include:
- Cab Signaling and Automatic Train Control
- Super-elevate tracks for 90 mph speeds
- Additional pocket tracks for mid-line turnbacks
- Third track sections to allow train overtakes
- Parking expansion

Project Background
- Caltrain service is currently limited to a maximum of 79 mph; Cab control/ATC and track improvements would allow for 90 mph maximum
- The Caltrain 20-Year Strategic Plan (1997 - 2017) envisioned a maximum 106 train schedule, which provide some additional peak-hour service and 30 minute off-peak headways
- Some stations are at or near capacity and will require additional station parking at some stations

Proposed Operating Scenario
See "Caltrain Mass Transit Service" fact sheet for possible operating scenarios

Estimated Costs
(from 1998 Caltrain Rapid Rail Program)
Capital: $82.7 million
- Cab signal/ATC: $14 million
- Super-elevate tracks: $0.3 million
- Additional turnback tracks: $10 million
- Additional third track sections: $8.4 million
- Parking expansion: $50 million

Total Annual Operating Cost: $47 million
(1992$) additional compared to 66 train diesel service
Farebox Recovery Assumed: 43%
Net Annual Operating Cost: $20 million

Observations/Issues
- Third track and turnback tracks will provide more operating flexibility and better serve emerging markets along the Peninsula
- Capital projects will support expanded service, which in turn will support several planned or in progress transit oriented developments near Caltrain station.
- Increase speeds will improve Caltrain travel time and attract more riders.
- Expanded service will serve several of the largest growing markets in the Santa Clara Subarea.
- Projects will support rail transit level of service to the Peninsula.

Section N

San Francisco Subarea

San Francisco Subarea

- (A) Doyle Drive Replacement
- (B) Conversion of Additional Routes to Electric Trolley
- (C) New 30th/Mission BART Station
- (D) Fixed Guideway Routes: Geary Corridor; North Beach Corridor; Van Ness Corridor
- (E) 3rd Street Light Rail Transit (LRT) Extension to Chinatown
- (F) Caltrain San Francisco Downtown Extension (See Peninsula Corridor p. M-5)
- (G) Ferry Landside Expansion
- (H) Expanded Transbay Ferry Service (Terminal Locations)

Not Mapped.

- Expanded MUNI Bus

Project Title
Doyle Drive Replacement

Project Description
Replace existing Doyle Drive viaduct with a surface-level expressway

Project Background
- Included in the 1998 Regional Transportation Plan (RTP) Track 1. The Blueprint would accelerate the delivery of this project.
- Doyle Drive viaduct was built in 1936 and is nearly at the end of its useful life.
- Caltrans had first proposed to rehabilitate the existing Doyle Drive structure and add a lane in each direction with a median barrier.
- Subsequent legislation was passed that limited Doyle Drive to not more than its current 6-lane configuration without approval from the San Francisco Board of Supervisors.
- The Board's 17-member 1993 task force report, Caltrans 1993 Project Study Report (PSR) and the National Park Service's 1994 Presidio General Management Plan all support a surface-level expressway concept.
- The San Francisco County Transportation Authority (SFCTA) has received federal funding to conduct an environmental analysis and preliminary engineering on a Doyle Drive replacement.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $200 million (1996 Doyle Dr. Intermodal Study)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Project consistent with Presidio Master Planning.
- Median-separated expressway would provide improved safety compared to existing viaduct configuration.
- Surface expressway would provide better Presidio access than existing viaduct.

Project Title
Conversion of additional Muni routes to electric trolley bus

Project Description
This project would electrify Muni bus service on two main routes.

1. 71-Haight/Noriega
2. Extension of 41-Union and 45-Union/Stockton into the Presidio
3. Extend 33-Stanyan trolley over Potrero Hill along 48-Quintara

Project Background

- Project has long been included in Muni's Short Range Transit Plan (SRTP).
- Project is also included in San Francisco's Sales Tax Expenditure Plan.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $16 million (Muni 1997 SRTP)
Total Annual Operating Cost: $10.90 million
Farebox Recovery assumed: 39%
(represents savings of $2.02 million)
Net Annual Operating Cost: $6.62 million

Observations/Issues

- Electrification of existing diesel lines would have air quality benefits and reduce noise.
- Some resident have expressed concerns about visual impacts of overhead wires.
- After the initial capital cost, electric trolleys are less expensive to operate than diesel buses.
- Extending trolley into the Presidio would support National Park development.

Project Title
New 30th/Mission BART Station

Project Description
Add new 30th Street/Mission BART station, between existing 24th Street and Glen Park BART stations, with a pocket track for turnbacks.

Project Background
- Phase II BART Extension Staging Policy includes a project in San Francisco to be identified through coordination with the City and County of San Francisco
- Under evaluation by BART and San Francisco County Transportation Authority (SFCTA)

Proposed Operating Scenario
Trains would stop at new station. Pocket track would allow for scheduled mid-line turnbacks (similar to what BART now does its Montgomery station during the a.m. peak) or for schedule recovery

Estimated Costs (1998$ from BART)
Capital: $300 million
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Provides for more evenly spaced BART stations through southern San Francisco
- Supports San Francisco's plan to revitalize the Mission Corridor
- Good transfer point for several Muni bus lines and the J-Church Metro line
- Improves BART's flexibility for schedule recovery
- Additional station stop adds about 3 minutes to schedule
- Limited right-of-way available; station on 3% grade (BART criteria is 1% max.)

Project Title
Fixed Guideway Routes:
- Geary Corridor
- North Beach Corridor
- Van Ness Corridor

Project Description
- Geary Corridor: would be a median surface LRT on Geary from 48th Avenue to Laguna Street, then subway to Market (lower cost all-surface Geary alignments have been evaluated, but travel time savings are much lower compared to the subway option)
- North Beach: would be an extension of the proposed 3rd Street Central Subway terminus at Sacramento and would extend in subway to Union or Bay Street and continue on surface, connecting with the Muni F-Line near Fisherman's Wharf
- Van Ness Corridor: would extend from Sixteenth Street and Mission to Aquatic Park with the central section for south Market to Pacific Avenue as subway

Project Background
- The San Francisco County Transportation (SFCTA) Expenditure Plan identified the following four corridors for fixed guideway planning, design and construction: 3rd St, Geary, North Beach and Van Ness
- In 1995, the SFCTA adopted a Four Corridor Plan that recommended the 3rd Street LRT as top priority of the four corridors and proceed toward implementation; the remaining phases, in priority order are: Geary, North Beach, Van Ness
- 3rd Street Initial Operating Segment (IOS) between Caltrain 4th and Townsend terminus and Bayview-Hunters Point is a funded RTP project

Proposed Operating Scenario
There would be two lines within the proposed Central Subway: one from the Caltrain Bayshore station to Chinatown; and an additional line providing service between Chinatown and Third/Mariposa Streets to service Mission Bay. Also, the L-Taraval would be extended to the 4th/Townsend Caltrain terminal. Service on the two Third Street lines would operate 5-6 minutes in the peak and 10-12 minutes in the off-peak periods.

Estimated Costs
(from SFCTA Four Corridor Plan -esc. 1998$)
Capital:

Geary Corridor	$200 - $600 million
North Beach Corridor	$575 - $900 million
Van Ness Corridor	$150 - $675 million

Total Annual Operating Cost:

	Total Cost	Net Cost
Geary Corridor	$200 - $600 million	$139 - $417 million
North Beach Corridor	$575 - $900 million	$400 - $626 million
Van Ness Corridor	$150 - $675 million	$104 - $675 million

Farebox Recovery Assumed: 30%
Net Annual Operating Cost: TBD

Observations/Issues
- Projects intended to improve mobility beyond what is currently being provided by fairly extensive bus service
- Projects intended to optimize connectivity between other existing/proposed City LRT lines
- Van Ness project not eligible for SFCTA sales tax construction funds
- LRT improvements will be integrated with community revitalization projects

Project Title
3rd Street Light Rail Transit (LRT) Extension to Chinatown

Project Description
The 3rd Street LRT project is being planned in two phases. The first phase, the initial operating segment, is mostly funded and will be a surface alignment between the Visitacion/Little Hollywood area connecting to the Mission Bay Metro line and the Market St. Subway. The second phase would provide the Caltrain connection and continue up 3rd /Stockton Streets in subway configuration to Chinatown.

Project Background
- The San Francisco County Transportation (SFCTA) Expenditure Plan identified the following four corridors for fixed guideway planning, design and construction: 3rd St, Geary, North Beach and Van Ness
- The 1993 Bayshore Transit Study evaluated improvement options in the 3rd Street Corridor
- In 1995, the SFCTA adopted a Four Corridor Plan that recommended that 3rd Street LRT as top priority of the four corridors and proceed toward implementation; the plan also recommended the 3rd Street phased approach if funding was not fully available
- A final EIS/EIR on the 3rd Street LRT project was certified in November 1998
- 3rd Street LRT project made eligible for federal New Starts funds in TEA-21
- The Phase 1, or Initial Operating Segment (IOS), has sufficient funding to construct; Phase 2 to Chinatown is not currently funded

Proposed Operating Scenario
There would be two lines within the proposed Central Subway: one from the Caltrain Bayshore station to Chinatown; and an additional line providing service between Chinatown and Third/Mariposa Streets to accommodate Mission Bay demand. Also, the L-Taraval would be extended to the 4th/Townsend Caltrain terminal. Service on the two Third Street lines would operate 5-6 minutes in the peak and 10-12 minutes in the off-peak periods.

Estimated Costs
Capital: $528 million (Third Street LRT Project EIR/EIS)
Total Annual Operating Cost: $3.2 million
Farebox Recovery Assumed: 28%
Net Annual Operating Cost: $2.3 million

Observations/Issues
- Provides improved mobility for Bayview/Hunters Point and Visitacion Valley areas, which have the highest unemployment in the City
- Project will also connect growing housing and employment in Mission Bay with downtown San Francisco
- 3rd Street LRT improvements will be integrated with community revitalization along 3rd Street corridor
- Expand 3rd Street service intended to bring corridor service levels comparable to other sections of the City

Project Title
Caltrain San Francisco Downtown
Extension (see Peninsula Corridor)

Project Title
Ferry Landside Expansion

Project Description
This project would provide for various landside dock improvement to support expanded ferry service to the S.F Ferry Terminal and Treasure Island

Project Background
- MTC's Regional Ferry Plan Update (March 1999) recommended expansion of some existing ferry services to the S.F. Ferry Terminal, as well s new ferry services from Berkeley/Albany, Benicia/Martinez and Port Sonoma, all serving the S.F. Ferry Terminal.
- The Bay Area Council's Blue Ribbon Task Force recommended a greatly expanded regional ferry system in its February 1999 report. The Task Force proposed new ferry service to San Francisco at the S.F. Ferry Terminal and Pier 43, as well as new locations at the Presidio, Fort Mason, Pac Bell Park, Mission Bay, Hunters Point and 3Com Park

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $10 million (MTC 1998 Ferry Plan Update)
Total Annual Operating Costs: N/A
Farebox Recovery Assumed: N/a
Net Annual Operating Cost: N/A

Observations/Issues
- Expanded landside improvements would allow for more ferry service to S.F. employment markets
- Some landside improvement could involve sensitive environmental areas
- Improvements would allow for ferry expansion to occur in other important corridors
- Ferry expansion would increase overall service reliability

Project Title
Expanded Transbay Ferry Service
(Terminal Locations)

(See Transbay Corridors)

Project Title
Expanded Muni Rapid Bus Corridors

Project Description
Reduce headways and add new express service on select Muni Routes. Key Muni routes improved include: 9, 14, 7, 16, 28, 38, 42, 45, 47 and 49.

Project Background
- Muni has begun a program to improve service reliability.
- Proposed Blueprint project includes several "rapid bus improvements" to improve route seating capacity and improve service reliability.

Proposed Operating Scenario
Most bus improvements involve reducing peak and mid-day headways on existing Muni routes by 2 to 5 minutes. Some new service is added.

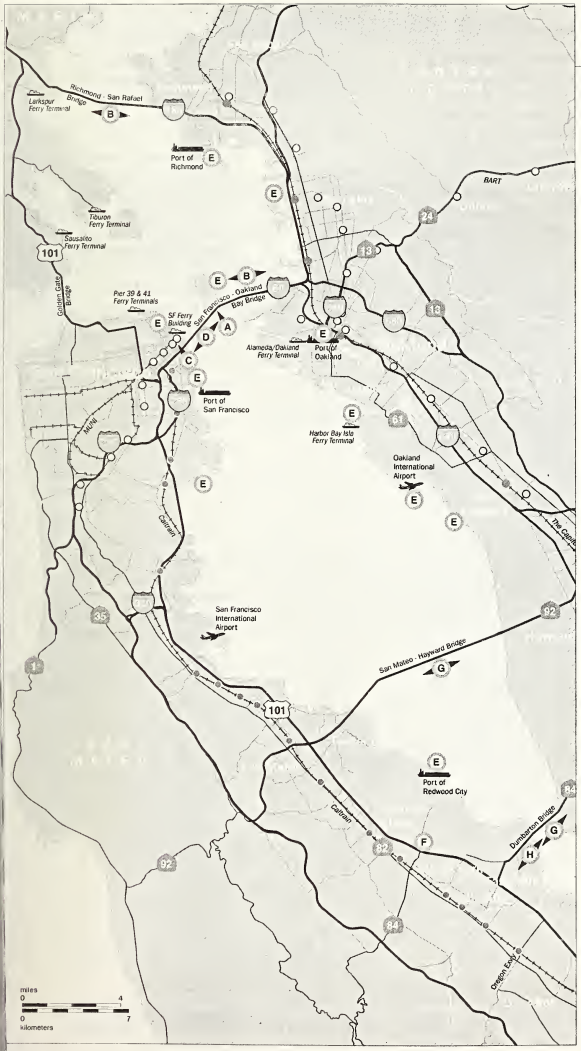
Estimated Costs
Capital: $31.6 million (1999$)
Total Annual Operating Costs: $22.3 million (1999$)
Farebox Recovery Assumed: 33%
Net Annual Operating Cost: $16.9 million

Observations/Issues
- Extends hours of express service
- Provides enhanced services to outer quadrants of the City to downtown.
- Cost-effective way to improve transit capacity.
- Improves citywide service coverage and transit connections.

Section O

Transbay Corridors

Transbay Corridors



Bay Bridge – Richmond-San Rafael Bridge

- (A) New Westbound and Eastbound Ramps to I-80(Bay Bridge) from Treasure Island
- (B) Transbay Transit Service Expansion (AC Transit, GG Transit)
- (C) Renovated/New Transbay Terminal
- (D) Rail on the Bay Bridge
- (E) Expanded Transbay Ferry Service (Terminal Locations)

Not Mapped:

- BART's Advanced Automatic Train Control (AATC) System Completion

San Mateo Bridge – Dumbarton Bridge

- (F) SR 84 Bayfront Extension from US 101 to SR 82 (El Camino Real)
- (G) Increased Transbay Bus Service
- (H) Dumbarton Corridor Rail Service

- Interstate Highway
- State Highway
- U.S. Highway
- Freeway
- Other Highway
- Major Arterial
- Airport
- Port
- Ferry Terminal
- Rail Line
- Amtrak Station
- ACE Station
- Caltrain Station
- BART Line/Station

Project Title
New Westbound and Eastbound Ramps to I-80 (Bay Bridge) from Treasure Island

Project Description
Provide new westbound and eastbound on-ramps with the new Bay Bridge east span project.

Project Background
- The new Bay Bridge East Span project mentions existing Treasure Island access configuration.
- Existing ramps provide limited storage and very short ingress/egress merges
- San Francisco would like to improve ramps to Treasure Island from the Bay Bridge to serve planned new development.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $42 million (from Caltrans in 1998$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Treasure Island re-use plan is estimated to generate a significant number of work and recreational trips when full build-out is achieved.
- New ramps are not an eligible "amenity" to receive portion of new $1 bridge toll for seismic retrofit to increase tolls and build new East span of Bay Bridge.

Project Title
Expand AC Transit and Golden Gate Transit Transbay Service

Project Description
Provide more frequent service and add mid-day service on several AC Transit Bay Bridge Transbay lines into San Francisco from: Alameda, Hayward, Berkeley, and Emeryville.

Improve Golden Gate Transit service on the Richmond-San Rafael Bridge between San Rafael and El Cerrito Del Norte BART.

Project Background
- AC Transit's Comprehensive Service Plan-a planned restructure and service improvements-has been impeded by fiscal constraints.
- In June 1996 service hours were cut due to projected budget shortfalls.
- The recent BART strike and an improved financial outlook has allowed the District to improve Transbay service.
- The District recently completed a Transbay Comprehensive Service plan that outlines various service options for Transbay operation; a portion of the plan was implemented in 1998, while further changes will be made as funding becomes available.
- Golden Gate Transit's Richmond Bridge service has been up and running the last few years to provide service between Marin County and BART.

Proposed Operating Scenario

Route improvements include the following:

	Current Headways (min)		Proposed Headways (min)	
AC Transbay Route	Peak	Mid-Day	Peak	Mid-Day
F	20-45	30	15-30	15
G	30	n/a	30	60
H	45	n/a	30	60
O	10-60	42-45	10-30	30
S	30-45	n/a	15	60
W	15-45	n/a	15-30	60
Y	25	n/a	15	60
Golden Gate Transit				
40	30	30	15	15

Estimated Costs
Capital: $4.18 million (1999$)
Total Annual Operating Cost: $3.6 million (1999$)
Farebox Recovery Assumed: 25%
Net Annual Operating Cost: $2.7 million (1999$)

Observations/Issues
- Transbay bus service viewed as superior to BART service by those directly served by routes in local neighborhoods.
- AC Transit reports that Transbay bus from the Richmond/Albany/Berkeley received substantial travel time savings due to new I-80 HOV lanes.
- Other Transbay transit services (bus, ferry, BART) viewed as both complimentary and competing services.
- Due to slow growth in Marin County, transit ridership across the Richmond Bridge will be low growth over the near term.

Project Title
Renovated/New Transbay Terminal

Project Description
Upgrade or rebuild the existing Transbay Terminal at its current location.

Project Background

- Transbay Transit Terminal and adjoining ramps were completed in 1939 as part of Bay Bridge construction; the Terminal was designed to accommodate East Bay rail services.
- Rail service ended in the late 1950's and the Terminal was revamped for AC Transit and other bus services.
- After 1989 Loma Prieta earthquake, Caltrans (owner/operator) and the City of San Francisco questioned whether to retain and retrofit the existing terminal and ramps or remove them and build a new facility.
- In 1994, the City and Caltrans initiated an evaluation of a new and/or renovated terminal building at the existing site or new facility at a Main/Beale site; at about the same time, Peninsula Joint Powers Board (JPB) began an evaluation of extending Caltrain to downtown San Francisco.
- In 1996, the Board of Supervisors selected the Main/Beale site for the new bus terminal and the JPB chose an undergound terminal located underground at the existing Transbay Terminal site.
- Several jurisdictions (AC Transit, JPB, the City, Caltrans and MTC) have been evaluating various Transbay Terminal designs at different sites.
- In 1999, the San Francisco Board of Supervisors passed a resolution in support of maintaining the Transbay Terminal at its current location.
- MTC is currently conducting an evaluation of building a combined bus/train terminal at the current Transbay Terminal site.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $130 million (from Caltrans in 1998$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues

- Desire to build new terminal that serves local land use and transportation needs.
- Land parcels previously viewed as undevelopable due to existing Terminal footprint are being developed due to office development boom in downtown area.
- San Francisco policy currently supports terminal at existing site.
- Transbay terminal included in State legislation as eligible "amenity" to receive portion of new $1 seismic surcharge build new East Span of Bay Bridge.

Project Title
Bay Bridge Rail Service

Project Description
Provide rail services across the San Francisco - Oakland Bay Bridge.

Project Background

- In November, 1998, Bay Bridge passenger rail advisory measures were passed by the electorates in the cities of Berkeley, Emeryville, Oakland, and San Francisco.
- In April, 1999, MTC initiated a study to assess the feasibility of providing rail services on the Bay Bridge. The study is expected to be completed in December, 1999.
- The on-going study is examining various rail alternatives including light rail, intercity rail, high speed rail and BART. The study is examining 1) the structural capacity of the west spans, new east spans and Yerba Buena Island to accommodate the rail alternatives, including the seismic impacts of adding rail to the structures; 2) the alignments and station requirements for each of the rail alternatives; 3) the projected ridership levels for the rail alternatives; and 4) the capital and operating costs of a rail system operating across on the Bay Bridge.
- A second phase of the study is anticipated that will examine other options for improving transit services in the Transbay Corridor, including expanding transbay express bus and ferry services and the potential of a tube or separate bridge for rail services. This phase of the study could begin in early to mid 2000.

Proposed Operating Scenario
Rail service would operate from the Transbay Terminal vicinity in San Francisco across the Bay Bridge to the East Bay.

Estimated Costs
Capital: TBD
Total Annual Operating Cost: TBD
Farebox Recovery Assumed: TBD
Net Annual Operating Cost: TBD

Observations/Issues

- The current bridge rail study is a "first look" feasibility analysis of placing rail on the Bay Bridge structures. A significant amount of follow-up analysis (preliminary engineering, seismic evaluations, etc.) will be required to determine the ability and desirability for placing rail service on the Bay Bridge.

Project Title
Transbay Ferry Service

Project Description
Various ferry services have been proposed to expand or implement ferry service in this corridor. The basic ferry routes include:

- Vallejo/S.F. Ferry Terminal
- Alameda/Hunters Point
- Berkeley/SF-Mission Bay/Alameda
- Berkeley/Treasure Island
- Harbor Bay/S.F. Ferry Terminal
- Oakland/Treasure Island
- Oakland Army Base/S.F. Ferry Terminal
- Richmond/S.F. Ferry terminal/South San Francisco
- S.F. Ferry Terminal/Treasure Island
- Oakland Airport/S.F. Ferry Terminal

Project Background
- MTC first adopted its Regional Ferry Plan in 1992. The plan examined 17 potential new ferry service.
- MTC's Regional Ferry Plan Update (March 1999) focused mostly on short-term improvements for existing or recommended ferry services. The Plan identified Berkeley/Albany, Benicia Martinez and Port Sonoma to San Francisco as potential services that have promise and should be further evaluated.
- The Bay Area Council's Blue Ribbon Task Force recommended an expansive regional ferry system in its February 1999 report, which included the introduction of new Transbay/Bay Bridge ferry services.
- City of Richmond and Red and White fleet will begin commuter ferry service later this year.
- Cities or Berkeley and Albany have been discussing proposed ferry services.

Proposed Operating Scenario
All proposed Transbay ferry service, would operate every 15-30 minutes during the peak commute period and 30-60 minutes during the off-peak.

Estimated Costs

Capital: (costs from Bay Area Council Report)

Routes/Stops	Cost (millions)*
Vallejo/S.F. Ferry Terminal	$72.2
Alameda/Hunters Point	$14.1
Berkeley/SF-Mission Bay/Alameda	$22.4
Berkeley/Treasure Island	$7
Harbor Bay/S.F. Ferry Terminal	$15
Oakland/Treasure Island	$7
Oakland Army Base/S.F. Ferry Terminal	$14.1
Richmond/S.F. Ferry terminal/South San Francisco	$22
S.F. Ferry Terminal/Treasure Island	$9
Oakland Airport/S.F. Ferry Terminal	$21

* Includes feeder bus costs

Total Annual Operating Cost:

Route	Total Cost* (millions)	Farebox Recovery Assumed	Net Cost* (millions)
Vallejo/S.F. Ferry Terminal	$13.4	18%	$11.0
Alameda/ Hunters Point	$8.0	16%	$6.7
Berkeley/SF-Mission Bay/ Alameda	$11.6	28%	$8.4
Berkeley/ Treasure Island	$3.1	29%	$2.2
Harbor Bay/ S.F. Ferry Terminal	$7.9	15%	$6.7
Oakland/ Treasure Island	$3.1	29%	$2.2
Richmond/S. F. Ferry Terminal/ South San Francisco	$8.5	19%	$6.9
Richmond/S. F. Ferry Terminal/ South San Francisco	$11.1	12%	$10.3
S.F. Ferry Terminal/ Treasure Island	$3.3	53%	$2.8
Oakland Airport/ S.F. Ferry Terminal	$8.1	137%	$3.3 Surplus

* Includes feeder bus costs

Observations/Issues

- Treasure Island service could hold potential once Treasure Island redevelopment occurs.
- Ferry service would still require feeder bus service to/from employment centers, which could reduce its attractiveness.
- Berkeley ferry service had limited success during Loma Prieta earthquake, but more frequent service could attract better ridership.
- Transbay/Bay Bridge already has very high transit mode split during a.m. peak
- Transbay bus versus ferry markets needs more analysis (are services complimentary or competing?)

Project Title
Complete Advanced Automatic Train Control (AATC) System

Project Description
Complete the automated train control system upgrade currently underway.

Project Background
- BART is currently in the process of upgrading its 30-year old train control system.
- Upgrades between Bayfair and Daly City are funded and currently underway; when completed, BART will be able to increase service from 21 train per hour to 30 trains per hour (from 2.7 minute headways to 2 minute headways).
- Additional trains will increase peak hour train capacity through the Transbay tube
- BART's capital improvement plan calls for installation of AATC on the rest of the system, which is the Blueprint "project".

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $271 million (from BART's 1998 SRTP in 1998$)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- AATC would allow more trains to operate during peak hours, which would increase overall system capacity.
- System upgrade would likely reduce train control breakdowns and improve system reliability.
- Expansion of rail transit service already in existence would minimize environmental impacts of building new systems.

Project Title
Complete Route 84 Bayfront Extension from Woodside Rd/101 Interchange to El Camino Real

Project Description
Complete the RTP Track 1 project, which extends the Bayfront Expressway from Marsh Road to Woodside Road (2 lanes each direction), and further extend along Woodside Road (Route 84) to El Camino Real.

Project Background
- San Mateo County Transportation Expenditure Plan included funds to extend the Bayfront Expressway from Marsh Road to Woodside Road and improve the connection to El Camino from Woodside Road.
- The San County Transportation Authority (SMCTA) has complete a Project Study Report for the project.

Proposed Operating Scenario
N/A

Estimated Costs
Capital: $60-85 million (from SMCTA)
Total Annual Operating Cost: N/A
Farebox Recovery Assumed: N/A
Net Annual Operating Cost: N/A

Observations/Issues
- Several cities have expressed concern about widening the existing Bayfront Expressway from 4 to 6 lanes between the Dumbarton Bridge and Marsh Road (Regional Measure 1 project) due to concerns about traffic loading up the newly modified Marsh Road interchange without the Bayfront Extension.
- Bayfront Extension may impinge on wetland areas.
- Project will provide alternative to US 101 between Marsh Road and Woodside Road.
- City of Redwood City supports because project will improve access to local streets and businesses.

Project Title
Increase San Mateo and Dumbarton Bridge Bus Service

Project Description
Increase existing Dumbarton bus service and restore/expand SamTrans bus service on the San Mateo Bridge.

Project Background
- Current Dumbarton bus service is provided by a consortium of transit operators.
- Additional Dumbarton bus service was recently added between the East Bay and Menlo Park/Palo Alto Caltrain station.
- SamTrans 90E service over the San Mateo Bridge was recently eliminated this year.

Proposed Operating Scenario

	Current Headways (mins)		Proposed Headways (mins)	
	Peak	Mid-Day	Peak	Mid-Day
SamTrans 90E	n/a	n/a	15	60
DB/DB1	30-60	90	15-30	30

Estimated Costs
Capital: 12.7 million (1999$)
Total Annual Operating Cost: $4.5 million (1999$)
Farebox Recovery Assumed: $27%
Net Annual Operating Cost: $3.3 million (1999$)

Observations/Issues
- Bus service provides more flexibility in providing service from home to employment centers
- Bus service uses existing infrastructure (e.g. HOV lanes, toll plaza bypass)
- Significantly less to build and operate
- Dumbarton rail line currently in public ownership
- Bus service likely the only feasible transit alternative in San Mateo Bridge corridor due to cost and other environmental issues

Project Title
Dumbarton Corridor Rail Service

Project Description
Provide rail service between the East Bay and Caltrain on the Peninsula.

Project Background
- In 1991 the San Mateo County Transportation Authority (SMCTA) sponsored a study to evaluate the feasibility of operating rail commute service in the corridor; the study concluded that service was not feasible in the short-term and should be considered in a longer-term regional rail strategy.
- SMCTA purchased the Dumbarton rail line between Redwood and Newark Junctions in 1994.
- In 1997 the SMCTA completed a subsequent evaluation of Dumbarton rail service in coordination with other regional rail links; the study generally came to the same conclusions as the 1991 study and recommended that bus service be expanded as a short-term strategy (which led to the addition of the DB1 bus service).
- The SMCTA recently commissioned another evaluation of alternative rail service evaluations for Dumbarton rail service.

Proposed Operating Scenario
The currently proposed service in SMCTA's latest report recommends the following: 12-weekday trains; 3 rounds trips between Union City and Millbrae and 3 round trips between Union City and San Jose (Diridon)

Estimated Costs
Capital: $77.4 million (from SMCTA)
Total Annual Operating Cost: $5.3
Farebox Recovery Assumed: 23-26%
Net Annual Operating Cost: $1.2-$1.4 million

Observations/Issues
- A Task Force made up of elected officials and business representatives have been meeting to develop a Dumbarton rail implementation plan.
- Based on travel forecasts, rail transit times are not competitive with auto times and therefore projected rail transit ridership has been low.
- Rail service defined by SMCTA's latest study has potential to more fully utilize Caltrain line and provide more service flexibility for Caltrain riders.
- Cost-effectiveness of proposed rail service remains questionable.
- Rail corridor already in public ownership.

Project Title
New Transbay Corridor Ferry Services: San Leandro/Redwood City and San Leandro/Moffett Field

Project Description
The Bay Area Council identified two potential ferry services linking the East Bay to the Peninsula:

- San Leandro/Redwood City
- San Leandro/Moffett Field

Project Background

- MTC first adopted its Bay Area Regional Ferry Plan in 1992. The plan examined 17 potential new ferry service routes, including Redwood City/San Leandro and South San Francisco/San Leandro. These routes were not recommended due to low projected ridership and high implementation costs.
- MTC's Regional Ferry Plan Update (March 1999) focused mostly on short-term improvements for existing or recommended ferry services.
- The Bay Area Council's Blue Ribbon Task Force recommended an expansive regional ferry system in its February 1999 report, which included the introduction of new East Bay/Peninsula ferry service.

Proposed Operating Scenario
Proposed Peninsula ferry service would be as follows:

Routes/Stops	Peak Headway	Off-Peak Headway
San Leandro/ Redwood City	30 min.	60 min
San Leandro/ Moffett Field	30 min.	60 min

Estimated Costs
Capital: (from Bay Area Council Report)

Routes/Stops	Cost (millions)*
San Leandro/ Redwood City	$14.7
San Leandro/ Moffett Field	$19.4

* Includes feeder bus costs

Total Annual Operating Costs:

Routes/Stops	Total Cost (millions)*	Farebox Recovery Assumed	Net Cost (millions)*
San Leandro/ Redwood City	$9.0	13%	$7.8
San Leandro/ Moffett Field	$9.1	21%	$7.2

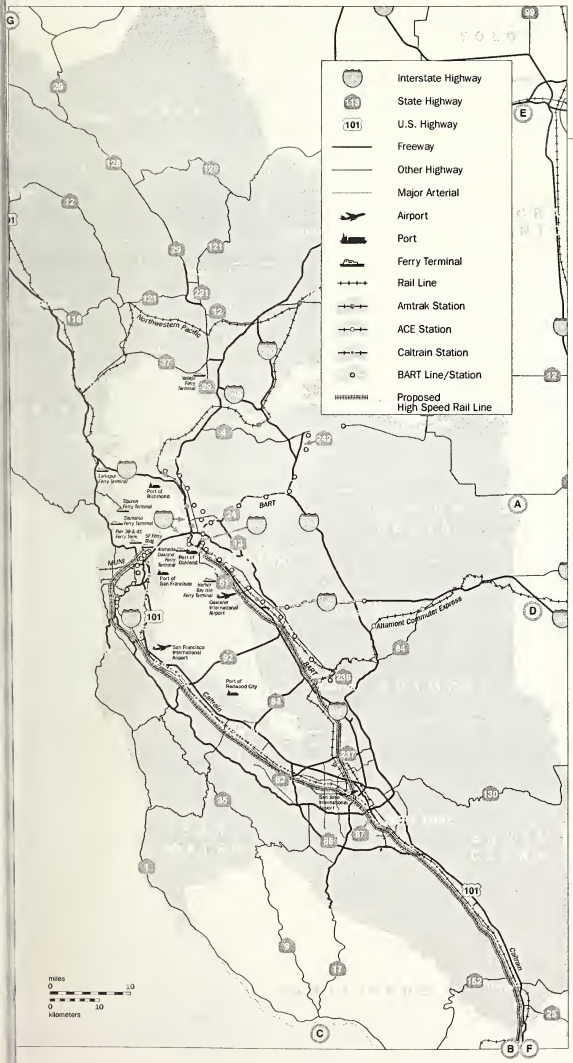
* Includes feeder bus costs

Observations/Issues

- Would best serve office and residential development close to the Bay.
- Would serve growing employment on the Peninsula east of US 101.
- Land side access at Moffett Field may impact environmentally sensitive areas.
- Port of Redwood City supports some level of ferry service to their respective jurisdications.
- Due to inaccessibility and access issues, ferry service will not be able to adequately serve the high employment markets in Silicon Valley.

Section P

Gateways to Other Regions



Gateways to Other Regions–Interregional Projects

- (A) SR 239 (see State Route 4 Corridor)
- (B) Caltrain to Hollister/Salinas/Monterey (see Santa Clara Valley Subarea)
- (C) Express Bus to Santa Cruz (see Santa Clara Valley Subarea)
- (D) Increased ACE Commuter Rail Service (see I-680 South Corridor)
- (E) Increased Capitols Intercity Rail Service to Sacramento (see I-80 Corridor)
- (F) Route 152 to Central Valley (see Santa Clara Valley Subarea)
- (G) Northwest Pacific (NWP) Commuter Rail to Mendocino (see Golden Gate Corridor)

Appendices

Public Comments on Candidate Blueprint Projects	Response
Freeway Improvements – Include expressways – Let the Central Freeway stand, widen it for an on ramp from Oak Street, south side at Laguna, and cross over Laguna, and then into a tunnel to Sunset Boulevard	The Blueprint Project Notebook consists of several safety and operation improvements to freeways within the region. The Central Freeway continues to be debated, however, this project is assumed to be funded in the 1998 RTP.
New Freeways – Build a new Interstate Freeway between Tracy and Vacaville to connect to I-505 or between Tracy and Davis to connect with SR-113 and then extend SR-4 from Railroad Avenue to connect to the new Interstate Freeway – Build SR 84 from I-580 along Isabel in Livermore, down to I-680 in Sunol, and then onto I-880 in Fremont – Build Route 239 between Brentwood and Tracy	These project concepts require further analysis to determine their feasibility. A Mid-State Toll Road connecting Livermore to Fairfield/ Vacaville was proposed a few years ago but did not move forward due to financing and environmental concerns, therefore, it is not included in the Blueprint Project Notebook. However, the Route 239 (Brentwood to Tracy) project is included in the State Route 4 Corridor section of the Blueprint Project Notebook.
Interchange Improvements – Make improvements to the I-880 Broadway/Jackson interchange	Several interchange improvements are included in the Blueprint Project Notebook such as those along I-80, I-680 North, and so forth. The interchange improvements to I-880 at Broadway/Jackson interchange project is included in Alameda County's Measure B sales tax measure and included as a candidate project in the Blueprint Project Notebook.
Arterial Improvements – Straighten and upgrade Vasco Road on the Livermore side of the county line to three lanes for safety improvements and better traffic flow – Improve Vasco Road on the Livermore's north side to connect with the new 84/Isabel interchange at I-580	Safety improvements to Vasco Road in Alameda County are included in the 1998 Regional Transportation Plan.

Public Comments on Candidate Blueprint Projects	Response
HOV – Expand HOV lane development and increase occupancy requirements – Reduce HOV development – Expand carpool lanes for the 680/Sunol Grade – Convert existing lanes to HOV – Expand carpool lanes as part of congestion pricing – Evaluate HOV lanes on the Bay Bridge	Several high priority HOV projects are included in the Blueprint Project Notebook. Some examples include I-580 HOV from Santa Rita Road to Vasco Road; widen I-880 to 8 lanes (2 HOV) from SR 237 to Montague Expressway to US 101; and HOV on US 101 from Atherton to SR 116 East. Bay Bridge HOV lanes will be evaluated in a separate ongoing Bay Bridge study which is evaluating rail and other transit options.
Transit – Create more regional transit options as many people use multiple services – Accommodate transit needs other than commuting – Expand use of bus systems – Focus transit around homes rather than job centers – Include better management of transit – Reduce costs to users of public transportation – Include job-centered based transit services – Make bus transit more efficient through regional connections	– Several transit projects are proposed for each travel corridor in the Blueprint Project Notebook. Some examples include enhanced transit service on San Pablo Avenue, Telegraph Avenue, and San Pablo Dam Road; express bus service on I-80, SR 4, and I-680 HOV lanes; and subscription bus service on Vasco Road in Brentwood/Antioch to Tri-Valley and through the Caldecott Tunnel along SR 24 – The 24 Hour Life Line Transit Services and Transit Subsidies for Low Income Persons projects, which are included in the San Francisco Bay Region section of the Blueprint Project Notebook, seek to close the transit gaps between low income neighborhoods and key employment centers.
BART Extensions – Expand development of BART – Reduce development of BART – Include BART to Warm Springs Extension – Fund at least one more BART station and extension in East County – Expand BART to San Jose and around the Bay, also to Greenville Road in Livermore and from Civic Center up Oak Street toward Golden Gate Bridge in San Francisco – Begin planning process for the East Livermore BART Extension	Several high priority BART extensions have been identified in the Blueprint Project Notebook. Some examples include BART from Fremont to Downtown San Jose via Warm Springs; BART extension to Railroad Avenue in Pittsburg; BART extension to Hillcrest Avenue in Antioch; BART extension from East Dublin/Pleasanton station to eastern Livermore along I-580; and construction of a West Dublin-Pleasanton BART station and 30th/Mission BART station.

Public Comments on Candidate Blueprint Projects	Response
BART Seismic Upgrades – Perform seismic upgrades to BART – Avoid seismic upgrades to BART as it is above the necessary standard	BART seismic upgrades are included in the Blueprint Project Notebook. Seismic upgrades are necessary to safeguard and protect users and BART system in the event of a major earthquake.
Ferry Service – Promote ferry use – Include Antioch and Pittsburg in the Bay Area-wide ferry system	Several new ferry service routes are proposed in the Blueprint Project Notebook. Specifically, ferry service from Antioch is included in the State Route 4 section of the Blueprint Project Notebook. Other examples include new ferry service from Martinez/Benicia, Richmond, and the Peninsula.
Commuter Rail Service – Expand development of commuter rail and use of rail corridors – Consider trunk rail and feeder transit providers for a short term strategy	Several high priority commuter rail development projects have been identified in the Blueprint Project Notebook. Some examples include the ACE Branch Line from Brentwood to Tracy; interim commuter rail service between Union City BART and Downtown San Jose Diridon Station; VTA LRT to Fremont or Union City BART; 3rd Street LRT Extension to Chinatown; Caltrain San Francisco Downtown Extension; and Dumbarton Corridor Caltrain rail service between the East Bay and the Peninsula.
Customer Service Programs – Avoid ticket systems that are complex, expensive, and lead to increased transit costs and fares – Expand ridesharing programs – Create financial incentives through employee's workplace to use public transportation	– MTC's TransLink® Program, which is included in the San Francisco Bay Region section of the Notebook, will develop a universal transit card system which will be deployed on every bus and light rail vehicle in the Bay Area. – MTC's Regional Rideshare Program, which is included in the San Francisco Bay Region section of the Blueprint Project Notebook, provides marketing and outreach to employers and the public as well as ridematching services to facilitate the formation of carpools and vanpools. – Although encouraged as a viable strategy, TDM incentive programs/projects are not included in the Blueprint Project Notebook. The Blueprint focuses on expansion projects that serve projected regional growth.

Public Comments on Candidate Blueprint Projects	Response
Emergency Services – Keep redundant facilities in case part of the system is damaged from a natural disaster	The Emergency Contingency Budget for Major Earthquake/Disaster project, which is included in the San Francisco Bay Region section of the Blueprint Project Notebook, addresses operating costs for services and activities required to respond to a major natural disaster. Many of the proposed rail and ferry services provide parallel service in many freeway corridors.
Pricing Strategies – Discourage auto use with expanded fee and toll systems – Include higher gas prices – Include higher bridge tolls – Include pricing reforms – Charge trucks to use roads during most congested hours	As part of the project evaluation process, MTC will do a roadway pricing sensitivity analysis to assess impacts on roads and transit.
Other Comments on Candidate Projects – Build a light-duty Bay Bridge from Harbor Bay to Hunters Point for light vehicles only—no vehicles more than 3,500 pounds loaded with a fine of $300 – Formalize casual carpools and address safety issues with more pick-up locations in origin-destination locations and ID cards for users – Initiate annual safety inspections to eliminate unsafe vehicles that lack routine maintenance – Promote increased safety and cleanliness of public transportation stations—specifically downtown and the BART Coliseum stations – Establish a people-mover between the Oakland International Airport and the BART Coliseum Station	The Blueprint seeks to identify expansion projects that serve projected regional growth. These projects are not included as candidate projects in the Blueprint Project Notebook because they are not yet fully defined and/or beyond the scope of the Blueprint plan. The Blueprint candidate project list does include an exclusive transit guideway project between Coliseum BART and the Oakland International Airport.

Public Comments on Candidate Blueprint Projects	Response
General Comments about Blueprint – For the ferry service expansion projects the qualitative observations should reflect concerns that an extended ferry system might be heavily polluting. – The Blueprint should include potential projects that serve regional interests but do not necessarily have a sponsor. – Where rail projects are under consideration, the Blueprint should compare alternative rail technologies to understand relative costs.	– Each of the candidate projects will be evaluated in the Evaluation Phase of the Blueprint process. Qualitative observations and some quantitative data about the potential environmental impacts of each project will be noted as appropriate. – The Blueprint Project Notebook contains the San Francisco Bay Region section which identifies regional and "other" projects that benefit the region as a whole but are not easily identified in a particular corridor or by a specific sponsor. – Commuter rail and BART extension projects will be considered as part of the Blueprint. In some cases, such as in the Fremont-South Bay corridor, there will be a comparison of BART, light rail and commuter rail options serving similar travel markets.

San Francisco Bay Region

System Operation and Maintenance

- BART Car Replacement
- Muni Capital Program
- Strategic Replacement and Upgrade of the GGBHTD Information System
- Upgrade to Mare Island Ferry Maintenance Facility and Fuel Farm
- Transit Operating Shortfalls
- Local Street Pavement, Non Pavement, and Bridge Maintenance Shortfalls

System Management

- Freeway Traffic Operations Systems (TOS)
- MTS Arterial Signal System Upgrade
- Intelligent Transportation Systems (ITS) Regional Integration

Seismic Preparedness

- BART Seismic Retrofit Program
- Golden Gate Seismic Retrofit Phase II and III
- Local Bridge Seismic Strengthening
- Emergency "Contingency" Budget for Major Earthquake/Disaster

Life Line Transit

- 24 Hour Life Line Transit Services
- Transit Subsidies for Low Income Persons
- Transit Service Gap Improvements
- Enhanced Paratransit Services
- School Bus Service Program

Customer Services

- TransLink®
- TravInfo™
- Freeway Service Patrol
- Call Boxes
- Regional Transit Trip Planning and Transit Information Web Page Systems
- Regional Rideshare Program

Bicycle and Pedestrian Facilities

- San Francisco Bay Trail Gap Segments
- San Francisco Bay Trail Bridge Segments
- East Bay Regional Trail Gap Segments
- Local Bicycle and Pedestrian Facilities - Regionwide

Railroad Right-of-Way Preservation

- Railroad Right-of-Way Preservation

Transportation for Livable Communities Program

- Transportation for Livable Communities Program

* This project is included in the 1998 Regional Transportation Plan Track 1.

Appendix B
List of Blueprint Candidate Projects

Golden Gate Corridor

- Complete the US 101 Ultimate Gap Closure Project (4.3 miles from North San Pedro Road to Lucky Drive)
- New HOV Lanes and Interchange Improvements on US 101 in Sonoma Co.*
- New HOV Lane(s) on US 101—Atherton to SR 116 East*
- Golden Gate Bridge Moveable Median Barrier
- Golden Gate Bridge Toll Plaza Bus Stop Relocation
- Commuter Rail Service from Cloverdale/Healdsburg to San Rafael/Larkspur
- Improvements to Ferry Service (Larkspur to S.F.)
- Golden Gate Ferry Larkspur Terminal Facility Expansion
- Golden Gate Bridge Under-deck Rehabilitation
- Golden Gate Bridge Maintenance Facility Relocation
- Improvements to Ferry Service (Sausalito to S.F.)
- Expanded Ferry Service (Tiburon to San Francisco)
- New Ferry Service (Port Sonoma to San Francisco)
- Construct New and Expand Existing Park-and-Ride Lots along US 101
- Expansion of Express and Intercity Bus Service on US 101
- Improved Access to National Park Sites in Marin County

North Bay East-West Corridor

- Low-Scale TOS on State Routes 116, 121 and 29
- Park-and-Ride Lots (SR 116 near SR 121, SR 29 near SR 12/29, SR 121 at SR 29)
- Intersection Improvement—SR 12/29 at SR 121
- Intersection Improvement—SR 12/29 at Airport Rd.
- Safety improvements on SR 121*
- Safety Improvements on Lakeville Hwy.—Shoulder Widening
- SR 12 Improvements between I-80 and Rio Vista Bridge
- Widen SR 12 from SR 29 to I-80 (Jameson Canyon)*
- SR 37 Widening with Environmental Improvements
- SR 116 Realignment (Sonoma to Petaluma)*
- New Express Bus Service from Fairfield to Napa via SR 12

Napa Valley Subarea

- Channelization of SR 29—Sulphur Creek to Mee Lane
- Widening of SR 121/12 from SR 29 to Sonoma County Line
- Widening of SR 29 from SR 221 to SR 29/12/Airport Rd.
- Widening of American Canyon Rd. to 4 Lanes between I-80 and SR 29
- Extension of Flosden Rd. from American Canyon Rd. to Kelly. Realignment and Signalization of American Canyon Rd./Flosden Intersection
- Express Bus Service to BART Link/Vallejo Ferry

* This project is included in the 1998 Regional Transportation Plan Track 1.

Interstate 80 Corridor

- I-80 Interchange Improvements: I-80/Highway 4, I-80/San Pablo Dam Rd., I-80/Cummings Skyway
- Interchange Improvements and possibly HOV on I-80 between Carquinez Bridge and Highway 37
- Richmond Parkway: Grade-Separated Interchange at San Pablo Avenue
- San Pablo Dam Road Improvements
- I-80 Widening between Vacaville and Dixon
- I-80/I-680/SR 12 Interchange Improvements
- Express Bus on I-80 HOV Lanes from Carquinez Bridge to Bay Bridge*
- Enhanced Transit Service in San Pablo Ave./Telegraph Ave. Corridors
- Peak Period Commuter Rail (Capitol Corridor: Solano County to Oakland)
- Capitol Corridor/West Oakland BART Connection
- Capitol Corridor/Rail Station in Hercules
- BART Extension to Hilltop Mall or Pinole Vista/Pinole Shores
- BART Extension to Hercules
- Additional Vallejo Ferry Service
- Intermodal Facilities for Vallejo Ferry Service
- New Ferry Service from Berkeley/Albany
- New Ferry Service from Martinez/Benicia
- New Ferry Service from Richmond
- Light Rail on the Carquinez Replacement Bridge
- Solano County Bus Service
- West Contra Costa County Intercity Bus Service
- Improved Bus Service on San Pablo Dam Road

State Route 4 Corridor

- SR 239 Connection—Brentwood to Tracy
- SR 4 Interchange Improvements
- Widening of SR 4 East Corridor
- Widening of State Route 4 Bypass to four lanes from Route 160 to Walnut Blvd. and construction of new grade separations and interchanges along the State Route 4 Bypass*
- Widening of SR 4 from I-680 to SR 242
- Truck Climbing Lanes on Kirker Pass Road
- Pittsburg/Bay Point BART Station Parking Expansion
- BART Extension to Railroad Avenue in Pittsburg
- BART Extension to Hillcrest Ave. in Antioch
- Ferry Service from Antioch
- Express Bus Service in SR 4 HOV Lanes (East County to Pittsburg/Bay Point BART Station)
- Subscription Bus Service on Vasco Road—Brentwood/Antioch to Tri-Valley
- Commuter Rail—Brentwood to Bay Point
- ACE Branch Line—Brentwood to Tracy

* This project is included in the 1998 Regional Transportation Plan Track 1.

Interstate 680 North Corridor

- Interchange Reconstruction - I-680/SR 4
- Interchange Improvements - I-680/El Pintado Road + others
- Widening of I-680 from Benicia Bridge to I-80
- Auxiliary Lanes along I-680 between I-580 and SR 24*
- Realignment of Taylor Blvd., Pleasant Hill Rd., Geary Rd.
- Construction of Caldecott Tunnel Fourth Bore
- Express Bus Service—Solano County to Contra Costa County via I-680
- Employee Shuttles to and from Walnut Creek BART Station
- Subscription Bus Service through Caldecott Tunnel
- Enhanced Rapid Bus Service on Ygnacio Valley Rd. and Treat Blvd.
- Light Rail on Benicia Bridge
- Additional BART parking in I-680/SR 24 Corridor
- Freeway-to-Freeway Connector Improvements: Westbound SR 4 to Southbound SR 242, Westbound SR 4 to Southbound I-680, and Southbound SR 242 to Southbound I-680

Interstate 580 Corridor

- New HOV Lanes—Tassajara Rd. to Vasco Rd.
- Westbound Truck Climbing Lane through Altamont Pass
- New West Dublin BART Station
- BART Extension to Livermore
- Enhanced Rapid Bus Service (Stanley Blvd.)

Interstate 680 South Corridor

- New I-580/SR 84 Interchange
- SR 84 Expressway
- I-880/I-680 Cross Connector (alignment TBD)
- I-680 HOV Lanes: Contra Costa County Line to SR 84
- Sustain and Enhance ACE Service*
- Express Bus Service (Tri-Valley to Northern Santa Clara County)*
- Expanded Subscription Bus Service (Tri-Valley to Northern Santa Clara County)

Interstate 880 Corridor

- Interchange Improvements—I-880/Winton Ave.
- Intersection Improvements (Grade Separation)—Mission/Foothill/Jackson
- Interchange Improvements—I-880/A Street
- Interchange and Approach Improvements—SR 92/Clawiter Rd.
- Union Pacific RR Grade Separation on Union City Blvd.
- I-880/Broadway/Jackson Interchange Completion*
- I-880 HOV Lanes from Hacienda to 98th Ave.
- Union City Intermodal Station (Phase II)
- Oakland Airport BART Connector
- Truck Bypass Lanes at I-238/I-580 Interchange
- West Oakland Truck Parking Area
- Rapid Bus Service (Berkeley/Oakland/San Leandro Corridor)
- Enhanced Rapid Bus Service (MacArthur Blvd. Corridor in Oakland)

* This project is included in the 1998 Regional Transportation Plan Track 1.

Fremont South-Bay Corridor

- Slip Ramp—I-880/Stevenson Blvd.
- Interchange Improvements—I-880/SR 237*
- I-880 Widening (2 HOV Lanes)—SR 237 to Montague Expwy.
- I-880 Widening (2 HOV Lanes)—Montague Expwy. To US 101
- BART Extensions: Fremont to Warm Springs, Warm Springs to Tasman, and Tasman to Downtown San Jose
- Interim VTA Commuter Rail Service—Union City to Downtown San Jose*
- Expanded VTA Commuter Rail Service—Union City to Downtown San Jose and ultimately to Gilroy
- VTA Light Rail Extension—Tasman to Warm Springs, Fremont or Union City BART Station

Santa Clara Valley Subarea

- SR 85/US 101 HOV Direct Connectors—Mountain View
- SR 85/US 101 HOV Direct Connectors—San Jose
- I-880/Coleman Ave. Interchange Improvement
- Vasona LRT: Campbell (Downtown) to Winchester Station
- East Valley LRT: Evergreen Area to Downtown San Jose (alignment TBD)
- Caltrain Service Expansion—San Jose to Gilroy*
- Rapid Transit (Guadalupe LRT) and Caltrain Connections to San Jose Airport
- New Alignment for SR 152 (Gilroy Expressway)
- US 101 Widening from 6 to 8 Lanes from from Bernal Rd. to Cochran Rd. in Morgan Hill
- Extension of Santa Teresa Blvd. from Masten Ave. to Bloomfield Ave. in Gilroy
- Caltrain Electrification—San Francisco to Gilroy (See Peninsula Corridor)
- Expanded VTA Bus Service
- Montague Expressway Interchange Improvements*
- Countywide Freeway Interchange Upgrades
- Countywide Freeway and Expressway Auxiliary Lanes
- Measure A Rail Projects*
- Countywide Roadway Connections and Freeway/Creek Overcrossings
- Silicon Valley ITS and SMART Corridor Additions*

Peninsula Corridor

- US 101 Auxiliary Lanes
- US 101 Interchange Modifications
- Widen Route 92 between US 101 and I-280 from 4 to 6 Lanes
- Improve Connection from Eastbound Route 1 to Southbound I-280 and Serramonte Boulevard
- Caltrain San Francisco Downtown Extension
- Airport Light Rail System (ALRS) Connection to Caltrain
- New Peninsula Corridor Ferry Services (Terminal Locations)
- Caltrain Grade Separations
- Enhanced Express Bus Service
- Caltrain Electrification
- Caltrain Mass Transit Service (All Day, More Frequent Service)
- Caltrain Rapid Rail Improvements
- Devil's Slide Tunnel*

* This project is included in the 1998 Regional Transportation Plan Track 1.

San Francisco Subarea

- Doyle Drive Replacement*
- Conversion of Additional Routes to Electric Trolley
- New 30th/Mission BART Station
- Fixed Guideway Routes: Geary Corridor, North Beach Corridor, Van Ness Corridor
- 3rd Street Light Rail Transit (LRT) Extension in Chinatown
- Caltrain San Francisco Downtown Extension
- Ferry Landside Expansion
- Expanded Transbay Ferry Service (Terminal Locations)
- Expanded MUNI Bus

Transbay Corridors

- New Westbound and Eastbound Ramps to I-80 (Bay Bridge) from Treasure Island
- SR 84 Bayfront Extension from US 101 to SR 82 (El Camino Real)
- Transbay Transit Service Expansion (AC Transit, GG Transit)
- Renovated/New Transbay Terminal
- Increased Transbay Bus Service
- Dumbarton Corridor Rail Service
- Rail on the Bay Bridge
- Expanded Transbay Ferry Service (Terminal Locations)
- BART's Advanced Automatic Train Control (AATC) System Completion

Gateways to Other Regions - Interregional Projects

- SR 239 (See State Route 4 Corridor)
- Caltrain to Hollister/Salinas/Monterey (See Santa Clara Valley Subarea)
- Express Bus to Santa Cruz (See Santa Clara Valley Subarea)
- Increased ACE Commuter Rail Service (See I-680 South Corridor)
- Increased Capitols Intercity Rail Service to Sacramento (See I-80 Corridor)
- Route 152 to Central Valley (See Santa Clara Valley Subarea)
- Northwest Pacific (NWP) Commuter Rail to Mendocino (See Golden Gate Corridor)

* This project is included in the 1998 Regional Transportation Plan Track 1.

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